

APPENDIX I

USER INTERFACE SPECIFICATIONS CHECKLIST

PURPOSE

The User Interface Specifications (UIS) checklist is provided as a tool to use in assessing the extent to which software complies with the specifications contained in the DII style guide. A completed checklist shall accompany the submission of segments to DISA and serve as documentation that the detailed requirements associated with the style-related compliance items in appendix H have been satisfied. The checklist can also be incorporated into the software quality assurance process of an organization and applied as needed during software development and testing to ensure that the user interface complies with DII style specifications. In this case, the use of the checklist is for the benefit of the organization performing the assessment to provide guidance for software development and improvement. While a partial assessment may be of value to the organization, using the checklist in this manner cannot be represented as an indication of DII compliance.

The checklist can be used to assess the degree of style compliance of a single segment or application or an entire system. While the checklist defines the required appearance and behavior for a wide range of user interface features, it does not mandate that all of these features be implemented in order to be considered DII compliant. It is expected that an organization will follow the tailoring process described below and then apply the resulting checklist to ensure that the features present in the software appear and behave according to DII specifications. A style assessment is the same whether the software being examined is a segment, an application, or a system; the only difference is in the scope of the assessment. The decision process should be to determine whether a given style feature is required for software usability and then to assess if the feature is present and has been implemented in a DII-compliant manner.

STYLE ASSESSMENT PROCESS

Tailoring the Checklist. To tailor the checklist, first review each of the major sections and determine which ones apply to the software being reviewed and which ones can be excluded from the assessment. Next, review the remaining sections and identify the specific items that are not applicable to the software being assessed and can also be excluded from the assessment. Finally, document the reasons for the omissions to establish a record of the logic of the tailoring process.

The tailoring process should be based on criteria such as (a) the operational capabilities being delivered as they are defined in requirements or design documentation for the software, (b) the maturity of the software (e.g., is it an initial prototype or a production-level delivery), and (c) the development priorities of the organization responsible for the software being evaluated. While some sections of the checklist can be omitted from the assessment because the style features described are inappropriate to implement in the software, items cannot be excluded solely because they happen to be absent from the user interface.¹ In addition, if the checklist will be submitted to DISA as justification for a particular compliance level, sections of the checklist cannot be excluded if they are required to satisfy a style item at that level. For example, a checklist that documents level 6 compliance cannot exclude the section related to object transfer since the style requirements for that level call for a segment to implement this user interface feature.

The tailoring process should be documented in enough detail that an outside reviewer can examine a completed checklist and determine if the resulting assessment provides an adequate evaluation of the level of DII style compliance. The documentation shall be submitted to DISA along with the completed

¹ More specific criteria on identifying non-applicable items will be provided in a future version of this document.

checklist as justification for a particular compliance level. Those user interface features for which DISA has approved a waiver to diverge from DII requirements should be identified in the documentation.

Using the Checklist. To use the checklist, compare the appearance and behavior of the software with that specified in the checklist item. Code the item as YES if the software implements the item in the manner described. All instances of the style feature described by the item must be implemented in the software in the manner described for the item to be considered DII-compliant (i.e., be coded as YES). Code the item as NO if the software diverges from the appearance or behavior required by the item. Annotate the item with a description of the divergence (e.g., the window, menu, and/or button where the failure was observed) and, if appropriate, an explanation for why the divergence occurred (e.g., operational requirement), and include these explanations with the completed checklist. Indicate if the organization has an approved migration plan that will correct the divergence or if a waiver from DISA is requested to allow the divergence.

It is assumed that the individual using the checklist is familiar with the tasks performed by the software being assessed and can access documentation with which to confirm expected user interaction with the software. Information about the software can be obtained from interactions with the developer and the intended user community and from documents such as a user's guide and concept of operations. The relevant section of the style guide should be consulted if additional detail about individual checklist items is needed. Checklist items have been written to describe the appearance and behavior of the user interface as it is presented to users; the intent is to assess compliance through interaction with the user interface, rather than by review of software code.

The compliance assessment should be performed on the target hardware platform(s) and under environmental conditions similar to the operational setting(s) in which the software will be used. An appropriate test environment is important so that the adequacy of style features such as color, font, and contrast can be assessed. In addition, in cases where software is drawn from multiple sources, the assessment should include the new components developed by the organization performing the assessment as well as existing components that have been assembled and/or customized within the software. Components contributed by different development groups need to be assessed to ensure that a comprehensive review is performed of the software. A description of the test conditions should be included with the completed checklist, especially if the software could not be exercised in an operationally appropriate environment, so that an outside reviewer can determine the adequacy of the assessment.

The amount of the user interface (i.e., number of windows) that needs to be examined to establish compliance depends on the characteristics of the software being reviewed. It is expected that an assessment will examine at least 75 percent of the windows in the software and include all unique windows. In addition, all non-unique windows need to be identified, and the assessment is expected to include at least one example of each of them. Finally, the assessment needs to exercise every operational function performed by the software, even if the function is only an option within the software or is expected to be phased out. The assessment also needs to exercise all utility functions and known failure modes available within the software.

USER INTERFACE SPECIFICATIONS CHECKLIST

2.0 INPUT DEVICES

2.1 POINTING DEVICE INPUT

2.1.1 The Pointer

- ___ 1 The pointing device is associated with a single pointer on the screen.
- ___ 2 The hotspot of the pointer indicates the precise location where operations occur.
- ___ 3 The location of the hotspot does not move as the pointer changes shape.
- ___ 4 The pointer moves anywhere on the screen.
- ___ 5 When users move the pointing device, the pointer moves in the corresponding direction.
- ___ 6 The pointer remains in place until moved by users; it is not moved arbitrarily by the application.

2.1.2 Pointer Shapes

- ___ 1 The pointer shapes in figure 2-1 are used when providing the functions indicated.
- ___ 2 The application redefines pointer shape only when the pointer is in an application window.
- ___ 3 New pointer shapes are not created for functions that already have a shape.
- ___ 4 Pointer shapes are not associated with functions they were not designed to represent.
- ___ 5 New pointer shapes are easy to see, with a hotspot that is obvious and easy to locate.
- ___ 6 New pointer shapes suggest their purpose and are not confused with other objects.

2.1.3 Pointing Device Buttons

- ___ 1 The application supports integrated Select and Transfer functions as shown in table 2-1.
- ___ 2 Motif: When an integrated model is implemented, the application does not perform any Transfer function with button 2 when that button is used as BAdjust.
- ___ 3 The application does not change pointing device characteristics defined at the system level.

2.2 KEYBOARD INPUT

2.2.1 Fixed Function Keys

- ___ 1 The application uses the keyboard mappings in appendix B when performing the functions in appendix A.
- ___ 2 If the application defines additional functions, they do not conflict with keys listed in appendix A.
- ___ 3 <Ctrl>, <Shift>, and <Alt> are used only to modify the function of other key(s).
- ___ 4 <Shift>+key(s) are used for actions that extend or are complementary to the actions assigned to the unmodified key(s).
- ___ 5 <Ctrl>+key(s) are used for infrequent actions or for actions that represent larger-scale versions of the actions assigned to the unmodified key(s).
- ___ 6 <Alt> is used only to provide access to mnemonics.
- ___ 7 New key bindings are visible in application windows (e.g., as mnemonics/accelerators).

2.2.2 Variable Function Keys

- ___ 1 Command names for variable function keys are displayed on the screen as soft keys.
- ___ 2 Soft key labels displayed on the screen are modified when the meaning of a key changes.
- ___ 3 No more than two functions are assigned per soft key.
- ___ 4 Users can easily return to the set of base-level functions (e.g., a "Home" key is available).
- ___ 5 Soft keys are implemented in a manner consistent with input focus policy.

- ___ 6 The actions mapped to soft keys do not conflict with those in appendix A.
- ___ 7 Soft keys are grayed out when the window containing the keys does not have focus.

2.2.3 Text Entry

2.2.3.1 Text Entry Modes

- ___ 1 <Insert> toggles between insert and replace modes if the field supports replace mode.
- ___ 2 The application provides access to both insert and replace modes for text entry.
- ___ 3 The application does not switch arbitrarily between modes as users move between fields.

2.2.3.2 Text Entry Actions

- ___ 1 <Space> (or <Shift><Space> in Motif) inserts a space.
- ___ 2 <Enter> (or <Return> in Motif) inserts a carriage return in multi-line text.
- ___ 3 <Backspace> deletes the character to the left of the text cursor.
- ___ 4 <Delete> deletes the character to the right of the text cursor.
- ___ 5 <Tab> inserts a tab or moves to the next tab stop in multi-line text.
- ___ 6 Double clicking on text selects and highlights the word at the location of the pointer.
- ___ 7 When users highlight text and begin typing, the text disappears, the text cursor appears, and the new text is displayed.
- ___ 8 Motif: Triple clicking on text selects the line of text, and quadruple clicking selects multiple lines (e.g., a paragraph).

3.0 USER-COMPUTER INTERACTION

3.1 INPUT FOCUS

3.1.1 Focus Models

- ___ 1 Only one window on the screen has input focus at any time; within that window, only one object has focus at a time.
- ___ 2 The application is able to support both explicit and implicit focus.

Note: Because the default policy is assumed to be explicit, the checklist items below define an appearance and behavior based on this focus policy.

3.1.2 Assigning Focus with the Pointing Device

- ___ 1 Users assign focus by moving the pointer into the window and clicking BSelect.
- ___ 2 The window with focus is denoted by a change in the color of the window frame.

3.1.3 Assigning Focus with the Keyboard

- ___ 1 <Ctrl><Esc> displays a window listing currently running applications.
- ___ 2 <Alt><Esc> (and <Alt><Shift><Esc> in Windows) moves focus between applications.
- ___ 3 <Alt><Tab> and <Alt><Shift><Tab> move focus forward and backward through the window families in the application.
- ___ 4 <Alt><F6> and <Alt><Shift><F6> move focus forward and backward through the windows within a family.
- ___ 5 Windows: <Ctrl><F6> and <Ctrl><Shift><F6> move focus forward and backward through document windows in the application.
- ___ 6 <F6> (and <Shift><F6> in Windows) move focus between panes in the active window.

3.2 NAVIGATION

3.2.1 Pointing Device Navigation

- ___ 1 Placing the pointer on an object and clicking BSelect moves focus to the object; the object is also selected or activated (and highlights).
- ___ 2 The highlighting remains visible only while the window in which the object appears has focus.
- ___ 3 Clicking BSelect does not move focus to an object that is not selectable and cannot accept input.
- ___ 4 Placing the pointer on an object, pressing <Ctrl>, and clicking BSelect moves focus to the object but does not activate it.
- ___ 5 In scrollable objects, pressing BSelect and dragging the pointer outside the object executes autoscrolling (i.e., scrolls the object in the direction of the pointer).

3.2.2 Keyboard Navigation

3.2.2.1 The Location Cursor

- ___ 1 A single location cursor indicates the object with focus in a window.
- ___ 2 Only one location cursor appears in a window at any time.
- ___ 3 The position of the location cursor is not affected by movement of the pointing device.
- ___ 4 The shape of the text cursor is a vertical bar in insert mode and a shaded rectangle in replace mode.
- ___ 5 The text cursor flashes when the object containing it has keyboard focus.
- ___ 6 The flash rate for the text cursor is 2-5 Hz.
- ___ 7 The text cursor is easy to see whenever it appears in a text area.
- ___ 8 New location cursor shapes are created only if existing ones do not provide the functions desired.

3.2.2.2 Navigation in Tab Groups

- ___ 1 <Tab> (and <Ctrl><Tab> in Motif) moves the location cursor to the next tab group.
- ___ 2 <Shift><Tab> (and <Ctrl><Shift><Tab> in Motif) moves the location cursor to the previous tab group.
- ___ 3 If none of the controls in a tab group can have keyboard focus, <Tab> (and <Ctrl><Tab> in Motif) skips the group.
- ___ 4 The arrow keys move the location cursor among the elements of the tab group with focus.
- ___ 5 <Ctrl> in combination with the arrow keys move the location cursor one large increment (e.g., to the next word in text).
- ___ 6 If a graphics-like object uses a positional cursor, the arrow keys move the cursor one unit at a time in the direction indicated by the arrow.
- ___ 7 <Home> and <End> move the location cursor to the leftmost/rightmost element.
- ___ 8 <Ctrl><Home> and <Ctrl><End> move the location cursor to the beginning/end element.
- ___ 9 In scrollable objects, <PageUp>, <PageDown>, <Ctrl><PageUp>, and <Ctrl><PageDown> scroll one page (minus one line).
- ___ 10 Windows: When <ScrollLock> is enabled, the navigation keys scroll data without moving the location cursor or affecting existing selections.

3.2.2.3 Location Cursor Behavior During Navigation

- ___ 1 Tab group order is left to right, top to bottom in the window.
- ___ 2 When a window opens, the location cursor is on the control users are expected to interact with first.
- ___ 3 When a window regains focus, the location cursor is on the control that last had focus.

- ___ 4 Location cursor movement in a window is from upper left to lower right unless the control is scrollable.
- ___ 5 The location cursor wraps between the last and first control/groups in the window.
- ___ 6 When the location cursor moves to a tab group, it is placed on the first available control in the group.
- ___ 7 The location cursor skips a tab group if none of the controls can have keyboard focus.
- ___ 8 In scrollable controls, focus remains on the element where it was before scrolling began even though the location cursor may not be in view.
- ___ 9 In scrollable controls, any keyboard action that moves the location cursor or makes a modification at the cursor location scrolls the control so the cursor is visible.
- ___ 10 The location cursor is always visible as it moves between/within tab groups in a window.
- ___ 11 Moving the location cursor to a control does not change the size or position of the control.
- ___ 12 Motif: Keyboard navigation does not change select state; users execute a select action while location cursor is on a control to change its state.
- ___ 13 Windows: Keyboard navigation changes select state, unless scroll lock mode is enabled.

3.2.2.4 Text Cursor Behavior During Navigation

- ___ 1 When users click BSelect in an empty text area, the text cursor appears at the leftmost position in the area.
- ___ 2 When users click BSelect in a text area that contains text and the pointer is on the text, the text cursor is placed between the characters under the pointer.
- ___ 3 When users click BSelect in a text area that contains text and the pointer is beyond the end of text, the text cursor appears to the right of the final text character.
- ___ 4 <Tab> moves focus to a text field from the keyboard and displays the text cursor in the field.
- ___ 5 Motif: When users tab between text fields, the text cursor appears at the beginning of the text in the field.
- ___ 6 Windows: When users tab between text fields, the text cursor appears at the end of the text in the field.
- ___ 7 The arrow keys moves the text cursor one character or one line in the direction indicated by the arrow.
- ___ 8 The text cursor disappears from view when a text area loses focus and reappears at the same place when the area regains focus.
- ___ 9 If the cursor is not removed from view, it is grayed out and stops flashing when the area loses focus and returns to normal appearance and resumes flashing when the area regains focus.
- ___ 10 The text cursor appears only in text entry areas and not where text entry is not possible.
- ___ 11 Text entry is possible only after the text cursor is visible at a legal location; text entry is not possible when the text cursor is not visible.

3.3 SELECTION

3.3.1 Pointing Device Selection Methods

- ___ 1 The methods in table 3-1 are used for making selections in one- and two-dimensional collections.
- ___ 2 Motif: Users can perform the Adjust function in making a selection using either BSelect or BAdjust.
- ___ 3 Windows: Drag handles are displayed on or around an object when it is selected.
- ___ 4 The selection method(s) available in a collection match the type of selection that users are expected to make in the collection.
- ___ 5 Deselection affects only the select state of elements and does not delete any of the elements in a collection.
- ___ 6 Windows: <F8> toggles extend mode; when enabled, selection behaves as if <Shift> is locked down for all direction keys and pointing device actions.

- ___ 7 Windows: If selection modes are available, they supplement standard selection methods and include a visual cue when the mode is enabled.

3.3.2 Keyboard Selection Methods

- ___ 1 The location cursor is a solid rectangle in normal mode, a dotted rectangle in add mode.
- ___ 2 <Shift><F8> toggles between add mode and normal mode.
- ___ 3 Toggling between modes does not affect the select state of selections made with the pointing device.
- ___ 4 Motif: The methods in table 3-2 are used to make selections in one- and two-dimensional collections.
- ___ 5 Motif: The key bindings in appendix A are used to perform range selection in text collections.
- ___ 6 Windows: The methods in table 3-3 are used to make selections in one- and two-dimensional collections.
- ___ 7 <Backspace> and <Delete> delete the current selection.
- ___ 8 Motif: <Ctrl></> selects all of the objects in a collection.
- ___ 9 Motif: <Ctrl><\> deselects all of the objects in a collection.
- ___ 10 Motif: <Alt><Insert> reselects all elements in the most recently performed selection.

3.4 ACTIVATION

3.4.1 Basic Activation

- ___ 1 Placing the pointer on a button and clicking BSelect activates it.
- ___ 2 Pressing <Space> (and <Select> in Motif) on the button with focus activates it.
- ___ 3 When BSelect is pressed on a button, the appearance of the button changes (e.g., highlights) to indicate pending activation.
- ___ 4 When BSelect is pressed and the pointer is moved off a button, it returns to its normal appearance.

3.4.2 Mnemonics and Accelerators

- ___ 1 In the window with focus, <Alt> and the mnemonic for an object moves the location cursor to the object and selects or activates it.
- ___ 2 If the location cursor is already on an object, pressing the mnemonic for the object selects or activates it.
- ___ 3 If the menu or control is unavailable, pressing the mnemonic has no effect and focus remains unchanged.
- ___ 4 An accelerator is executed only when the window containing the accelerator has focus.

3.4.3 Default Actions

- ___ 1 When a default action is assigned to an object, the action is executed by double clicking BSelect on the object.
- ___ 2 If the object assigned a default action is used for making selections, the element under the pointer is selected and then the default action is executed.
- ___ 3 <Enter> (and <Ctrl><Return> in Motif) invokes the default action after making a selection in a window; these keys also invoke the default action in a window if focus is on an object other than multi-line text.
- ___ 4 If a default action is available, users can reverse the effects of the action (e.g., by selecting an Undo menu option or a Cancel push button).

3.4.4 Expert Activation, Previewing, and Autorepeat (Motif Only)

- ___ 1 If expert activation is implemented for an object, double clicking BSelect on the object performs the expert action.
- ___ 2 An expert action is available only in a group of push buttons or a group of radio buttons where one of the buttons is always on.
- ___ 3 If an expert action is available, it is used only as short-cut to features available elsewhere in a window.
- ___ 4 When focus is on a button used for expert activation, there is no default action available, unless the default and expert actions are the same.
- ___ 5 If previewing is available, pressing BSelect on a push button or toggle button displays information describing what happens when the button is activated; the information is removed when BSelect is released.
- ___ 6 If previewing is available, the application provides a means for expert users to disable it.
- ___ 7 If autorepeat is available, holding down BSelect on a push button executes its action repeatedly; autorepeat stops when BSelect is released.

3.4.5 Cancel Activation

- ___ 1 <Esc> (or <Cancel> in Motif) cancels the action being executed and returns the object to its state prior to the action.

3.5 TRANSFER

3.5.1 Drag Transfer

3.5.1.1 Drag Transfer Operations

- ___ 1 The application supports drag transfer operations.
- ___ 2 Motif: Drag transfer is available for all objects that are represented as icons and for all elements that users can manipulate.
- ___ 3 Motif: Drag transfer provides redundant access to functionality available elsewhere in the window (e.g., through menus or push buttons).
- ___ 4 Motif: To perform a drag move, users press <Shift> and drag the object using BSelect (or BTransfer).
- ___ 5 Motif: To perform a drag copy, users press <Ctrl> and drag the object using BSelect (or BTransfer).
- ___ 6 Motif: To perform a drag link, users press <Ctrl><Shift> and drag the object using BSelect (or BTransfer).
- ___ 7 Motif: Releasing BSelect (or BTransfer) ends a drag operation; the insertion point is the position where this action occurs.
- ___ 8 Motif: The default drag operation if no modifier key is used is a move.
- ___ 9 Motif: BSelect initiates a drag if the drag is started on a selected element; the drag starts once the drag threshold has been reached.
- ___ 10 Windows: To perform a drag transfer, users drag the object using BSelect.
- ___ 11 Windows: The default drag operation is a move but may be a copy or link as defined by the destination.
- ___ 12 <Esc> (or <Cancel> in Motif) cancels a drag operation that is in progress and returns the object being dragged to its original location; releasing BSelect (or BTransfer in Motif) when not over a drop site also ends a drag operation.
- ___ 13 Dragging a set of selected elements drags the entire selection.
- ___ 14 The elements moved within a collection remain selected after they have been moved.
- ___ 15 Motif: Dragging an unselected element drags only the element and does not affect the selection.
- ___ 16 Motif: Dragging in overlapping elements occurs on the highest draggable element in the stack.

3.5.1.2 Feedback During Drag Transfer

- ___ 1 During a drag operation, the pointer changes to a drag icon.
- ___ 2 Motif: The source indicator in the drag icon represents the type of object(s) being dragged.
- ___ 3 Motif: The operation indicator in the drag icon shows the type of drag operation being performed.
- ___ 4 Motif: The operation indicator is included in the drag icon if the operation is a copy or link but not if it is a move.
- ___ 5 Motif: The state indicator has an arrow shape when the icon is on a valid drop site and a “cannot” shape when it is on an invalid drop site.
- ___ 6 Windows: As the pointer moves, the object, its outline, or a representation of the object moves with the pointer.
- ___ 7 The drop site changes appearance when the drag icon is placed on it; options include showing a solid line around the site, a raised or lowered edge around the site, or a pixmap drawn over the site in Motif or highlighting or other form of visual emphasis in Windows.
- ___ 8 Motif: When the drag icon is placed on a drop site, the site has a beveled edge that makes the site look recessed.
- ___ 9 If a drag transfer is successful, the object is placed at the drop site and the drag icon is removed.
- ___ 10 If the transfer does not occur immediately, the pointer changes to a “busy” shape until the transfer is complete.
- ___ 11 If a drag transfer fails, the object remains at the drag source and the drag icon is removed.
- ___ 12 Motif: The drag icon “melts into” the drop zone when dropped on a valid site and “snaps back” to the drag site when dropped on an invalid site.
- ___ 13 Motif: If a drag transfer fails, an error message is displayed that informs users why the failure occurred.
- ___ 14 Motif: If multiple elements are involved in a drag operation and the transfer is only partially successful, this feedback indicates which transfers succeeded and which failed.
- ___ 15 Motif: If the application provides help on a drag transfer, the dialog window providing this information contains a Cancel push button for cancelling the transfer operation.

3.5.1.3 Performance Guidelines (Motif Only)

- ___ 1 When BSelect is pressed, a drag transfer is initiated when the pointer has moved 10 pixels; when BTransfer is pressed, there is no drag threshold. A drag icon is displayed within 50 msec (max 70 msec) after the drag is initiated.
- ___ 2 When the drag icon is moved over a drop zone, the drag icon or drop zone change appearance within 50 msec (max 70 msec).
- ___ 3 When the drag icon is dropped on a drop zone, feedback occurs within 50 msec (max 120 msec) of releasing the pointing device button. The visual effects last 200-350 msec (max 500 msec).
- ___ 4 Data transfer is completed in 0.3-1.0 sec (max 2 sec) after the drop occurred. If the transfer takes longer than 2 sec, the pointer changes to a “busy” shape whenever it is on the object where the transfer is occurring, and a working message window is displayed and its contents updated every 2-3 seconds until the transfer is completed.

3.5.2 Clipboard Transfer

- ___ 1 The application supports clipboard transfer operations.
- ___ 2 If access to clipboard transfer is provided in an Edit menu, the Cut, Copy, and Paste options execute these actions as defined in appendix C.
- ___ 3 The keyboard accelerators in appendix C are available for executing cut, copy, and paste actions from the keyboard whenever an object that can be edited has keyboard focus.

- ___ 4 If the clipboard contents are text, Paste copies the contents to the location of the text cursor, and any existing text appears to the left of the cursor. If text has been previously selected when a Paste occurs, the selected text is deleted and the clipboard contents are pasted at that location.
- ___ 5 If the clipboard contents are graphic, Paste copies the contents to the pointer location in the window with input focus.
- ___ 6 If Paste is invoked from the pop-up menu for an object, the clipboard contents are pasted at the insertion point of the object. If the menu is popped up over a selection, the selection is deleted and the clipboard contents replace it if possible.
- ___ 7 Pasting an object from the clipboard does not select the object.
- ___ 8 The pasted object remains in the clipboard until another object is cut or copied into it.
- ___ 9 Users can view clipboard contents and are informed when they cut or copy an object whose size exceeds clipboard capacity.

3.5.3 Primary Transfer (Motif Only)

- ___ 1 To perform a primary move, users select the object, place the pointer at the destination, hold down <Shift>, and click BTransfer.
- ___ 2 To perform a primary copy, users select the object, place the pointer at the destination, hold down <Ctrl>, and click BTransfer.
- ___ 3 To perform a primary link, users select the object, place the pointer at the destination, hold down <Ctrl><Shift>, and click BTransfer.
- ___ 4 The insertion point for primary transfer operations is the position where BTransfer is released.
- ___ 5 If access to primary transfer is provided in an Edit menu, the Primary Copy and Primary Move options execute the actions and use the keyboard accelerators defined in appendix C.
- ___ 6 Transferring an object by primary copy or primary link does not select the object.
- ___ 7 Transferring an object by a primary move selects the object.
- ___ 8 The default if no modifier key is used with BTransfer is a copy operation.

3.5.4 Quick Transfer (Motif Only)

- ___ 1 Quick transfer is available in text components in the application.
- ___ 2 To perform a quick move, users hold down <Alt><Shift> while dragging the object using BTransfer.
- ___ 3 To perform a quick copy, users hold down <Alt><Ctrl> while dragging the object using BTransfer.
- ___ 4 To perform a quick link, users hold down <Alt><Ctrl><Shift> while dragging the object using BTransfer.
- ___ 5 The default when <Alt> and BTransfer are used to perform a quick transfer is a Copy operation.
- ___ 6 Using quick transfer does not select the object being transferred.

3.6 INTERACTIVE CONTROL

3.6.1 Object-Action Selection Model

- ___ 1 When working in the application, users first select an object, then select an action to perform on that object.
- ___ 2 When users make or change a selection, no other action is performed on the selected elements (i.e., separate selection and activation actions).
- ___ 3 The application informs users when interaction diverges from the object-action selection paradigm.

3.6.2 User Control of Interaction

- ___ 1 The application executes an action only in response to explicit user input.
- ___ 2 The pace of user input does not slow down the speed of application processing.

3.6.3 Immediate Feedback

- ___ 1 Some visible response by the application occurs within 0.2 sec of any user action.
- ___ 2 When a user request takes longer than 2-3 sec but less than 10 sec to process, the pointer changes to a “busy” shape.
- ___ 3 When a user request takes more than 10 sec to process, a working message window is displayed.
- ___ 4 Error feedback is provided to users within 2 sec of the time the error was detected.
- ___ 5 Visual cues show when the application can accept input, when it is temporarily unavailable, or it is unavailable during extended processing.
- ___ 6 The appearance of objects provides an indication of their availability.
- ___ 7 If an operation requires several actions, users are prompted with the actions to take.
- ___ 8 The application ignores user actions made during periods when input cannot be accepted.
- ___ 9 The pointing device and/or keyboard are disabled when input may be destructive; users cannot override disabling but are able to stop a process.

3.6.4 Error Detection

- ___ 1 The application does not execute an invalid action except to display an error message.
- ___ 2 When users make multiple errors with a single action, they are notified of each error.
- ___ 3 Feedback is immediate (i.e., occurs within 2 sec of error detection), is visual and/or auditory, and explains the nature of the error.
- ___ 4 When an error is repeated, feedback shows that the attempted correction was processed.
- ___ 5 Users are required to correct only the invalid action and not to repeat the entire sequence.
- ___ 6 After making correction, users execute same action for re-entry that was used originally.

3.6.5 Explicit Destruction

- ___ 1 Users confirm a destructive action before the action is executed by the application.
- ___ 2 Users confirm a close-window action only when the action will cause loss of data.
- ___ 3 The window with the destructive action remains displayed while request to confirm the action is presented.
- ___ 4 If the destructive action applies to multiple objects, users are provided with a list of the objects from which to select the ones that apply.

3.6.6 General “Undo” Capability

- ___ 1 Users can undo the most recent selection or action unless it was one requiring explicit destruction.
- ___ 2 Irreversible actions are labeled and clearly separated from those that are not irreversible.

3.6.7 Use of Processing Modes

- ___ 2 If a processing mode is implemented, the application provides a visual cue to indicate the mode currently in effect.

3.6.8 Consistency in Performing Operations

- ___ 1 The sequence of actions executed by users to perform the operations in the application can be completed rapidly and efficiently (e.g., with minimum keystrokes).

- ___ 2 Users execute the same sequence of actions whenever they perform an operation in the application.
- ___ 3 Users execute only those actions that are required to perform an operation.

4.0 WINDOWS AND WINDOW ICONS

4.1 WINDOW MANAGEMENT

4.1.1 Window Components

4.1.1.1 Title Bar

- ___ 1 The title bar extends across the top of the window, with the window name in the middle of the bar.
- ___ 2 Clicking on the title bar raises the window to the front of the screen and gives it focus.
- ___ 3 Pressing BSelect or BTransfer on the title bar and then dragging the pointer moves the window as the pointer moves.

4.1.1.2 Window Menu

- ___ 1 If a window supports any window management functions, it has a Window menu with options for performing these functions.
- ___ 2 The Window menu button is located at the left edge of the title bar.
- ___ 3 If a window management function is included in the Window menu, it executes the action and includes the mnemonic in appendix C.
- ___ 4 An accelerator is included only for the Close option in the Window menu.
- ___ 5 If the application includes accelerators for Window menu options, it uses the ones listed in appendix C.
- ___ 6 Motif: If any of the following window management functions is included in the Window menu, they are ordered: Restore, Move, Size, Minimize, Maximize, Lower, Occupy Workspace, Occupy All Workspaces, Unoccupy Workspace, and Close.
- ___ 7 Motif: Separators are included after the Lower option and before the Close option.
- ___ 8 Windows: If any of the following window management functions is included in a Window menu, they are ordered: Restore, Move, Size, Minimize, Maximize, Close, Switch To, and Next.
- ___ 9 Windows: Separators are included before the Close option and after it if additional options are included in the menu.
- ___ 10 If the application adds functions to the Window menu, they are appended to the bottom of the menu, with a separator between Close and the added options.
- ___ 11 Spring-loaded and posted methods are used to display Window menu and activate options with the pointing device.
- ___ 12 Double clicking on the Window menu button closes the window.
- ___ 13 <Alt><Space> (or <Shift><Escape> in Motif) displays the Window menu in the application window with input focus.
- ___ 14 Windows: <Alt><Hyphen> displays the Window menu in the document window with input focus.
- ___ 15 The arrow keys move the location cursor between available options in the Window menu.
- ___ 16 <Enter> (or <Return>, <Select>, or <Space> in Motif) activates an option and dismisses the Window menu.
- ___ 17 <Esc> (or <Cancel> in Motif) dismisses the Window menu without activating an option.

4.1.1.3 Window Control Buttons

- ___ 1 The Maximize button is positioned at the right edge of the title bar.

- ___ 2 The graphic in the Maximize button is a large square in Motif or an up arrow in Windows.
- ___ 3 Motif: Activating the Maximize button in a normal-size window expands it to its maximum size.
- ___ 4 Motif: Activating the Maximize button in a maximized window restores the window to its size and location before being maximized.
- ___ 5 Windows: Activating the Maximize button in a normal-size window expands it to its maximum size and replaces the button with a Restore button.
- ___ 6 Windows: Activating the Restore button of a maximized window restores the window to its size and location before being maximized.
- ___ 7 The Minimize button is positioned to the left of the Maximize button in the title bar.
- ___ 8 The graphic in the Minimize button is a small square in Motif or a down arrow in Windows.
- ___ 9 Activating the Minimize button minimizes the window.
- ___ 10 If additional window functions are needed, they are mapped to buttons placed to the left of the Minimize button or to the right of the Window menu button.

4.1.1.6 Resize Border

- ___ 1 Window components are not placed outside the boundary formed by the resize borders.
- ___ 2 Pressing BSelect or BTransfer on the resize border and dragging the pointer changes the window size as the pointer moves.
- ___ 3 Windows: All windows have frames except when they are maximized and fill the entire screen.

4.1.2 Behavior in Window Families

4.1.2.1 Parent-Child Relationships

- ___ 1 Minimizing a primary window replaces it and all of its children with a window icon; processing in the window continues.
- ___ 2 Opening a window icon redisplay the primary window and its children.
- ___ 3 Each primary window in the application is minimized separately.
- ___ 4 When a primary window is raised or lowered, it and all of its children move with it.
- ___ 5 Closing a primary window removes it and its children from the screen; processing in the window stops.
- ___ 6 When the last primary window for an application is closed, the application is closed.
- ___ 7 Windows: A document window is a parent but also the child of the application window within which it is displayed.
- ___ 8 When secondary or dialog window is opened, it appears in front of the parent which stays displayed.
- ___ 9 When a secondary window is closed, its children are closed but its parent is not affected.
- ___ 10 A dialog window has no child windows (except a help window, if one is available).

4.1.2.2 Interaction Modes

- ___ 1 Motif: Child windows are modal only when the application cannot proceed without additional information (e.g., potential loss of data).
- ___ 2 Windows: Child windows are modal.

4.1.3 Window Management Considerations

4.1.3.1 Window Size

- ___ 1 The normal size of a window is large enough so that all objects in it are visible when the window first appears.

- ___ 2 The minimum size of a window is wide enough to read the title and tall enough to read the title and menu bar.
- ___ 3 When a window is maximized, the size of objects in the window does not change.
- ___ 4 When a window is resized, the size of objects in the window and their relative position do not change.
- ___ 5 The contents of the window remain visible during resizing so users can view the effect.
- ___ 6 A window can be resized larger only if more information can be displayed.
- ___ 7 Resizing larger and maximizing do not obscure restricted portions of the screen.

4.1.3.2 Window Arrangement

- ___ 1 Window placement is overlapping.

4.1.3.3 Window Positioning

- ___ 1 When initially displayed, a window is positioned on the screen so that it is completely visible.
- ___ 2 If a window is related to other windows already displayed, it is offset below and to the right (or to the left/below/above if space is limited) of the information to which it relates and does not obscure the title of the window with the information.
- ___ 3 If a new window is unrelated to other windows currently open, it is placed in the center of the screen (or in the center of the application window in Windows).
- ___ 4 If a dialog window (or a menu window in Motif) is already displayed but obscured by other windows, re-choosing the command that displayed the window raises it to the front of the window stack without affecting its position on the screen.

4.1.3.4 Processing in Minimized Windows

- ___ 1 Motif: A message window is displayed when critical events occur in a minimized window.
- ___ 2 Windows: The window icon flashes when critical events occur in a minimized window, with a message window displayed when the user restores the window.

4.1.3.5 Moving Windows Between Workspaces (Motif Only)

- ___ 1 When the application opens a new window, it is displayed in the user's current workspace and only occupies that workspace.
- ___ 2 When users move application windows between workspaces, the windows related to a particular task move together.

4.2 WINDOW ICONS

4.2.1 Appearance

- ___ 1 A window icon has the same title as its corresponding window.
- ___ 2 Motif: The graphic image for a window icon is the same as that used for the application icon on the desktop.
- ___ 3 Motif: When an icon does not have focus, its title is the same width as the icon image; the title may be truncated to fit.
- ___ 4 Motif: When an icon has focus, the location cursor is displayed on the icon and the full icon title is shown.
- ___ 5 Motif: The Window menu for a window icon has the same options (except Size) as the menu for the corresponding window.
- ___ 6 Motif: If Minimize is included in the Window menu for a window icon, it is not available for selection.

4.2.2 Behavior

- ___ 1 Double clicking on a window icon restores a minimized window and its children.
- ___ 2 If the window had been maximized prior to being minimized, double clicking on the icon displays the window in its maximized size.
- ___ 3 Placing the pointer on an icon and dragging it with BSelect or BTransfer moves the icon.
- ___ 4 Motif: Clicking BSelect on the icon displays the Window menu.
- ___ 5 Motif: Clicking BSelect anywhere outside the Window menu dismisses the menu.
- ___ 6 Motif: Navigating to an icon from the keyboard gives the icon focus and displays the Window menu.
- ___ 7 Motif: Selecting Maximize from the Window menu displays the window in its maximized state.

5.0 MENUS

5.1 PULL-DOWN MENUS

5.1.1 Appearance

- ___ 1 The menu title is displayed in a menu bar at the top of the window.
- ___ 2 The menu title describes the category or type of options presented in the menu.
- ___ 3 The menu title is different from the other titles in the menu bar and does not appear as an option in the menu itself.
- ___ 4 The menu title is a single word whenever possible and does not contain numbers.
- ___ 5 The first letter of each word in the menu title is capitalized, except for prepositions and articles.
- ___ 6 If the menu title contains an acronym, it is capitalized.
- ___ 7 The menu title does not contain an ellipsis or a right-pointing arrow.
- ___ 8 A routing option that displays a window is followed by an ellipsis.
- ___ 9 A routing option that displays a submenu is followed by a right-pointing arrow.
- ___ 10 A submenu appears to the right of the parent menu (or below if space to the right is limited).
- ___ 11 A submenu is positioned to align its first option with the arrow in the parent option.
- ___ 12 The parent option for a submenu is always displayed as available.
- ___ 13 When the parent option is activated, the submenu is displayed, even if all of the options are unavailable.
- ___ 14 A submenu contains only the options in the submenu; it does not repeat the parent option.

5.1.2 Behavior

- ___ 1 Spring-loaded and posted methods are used to display a menu and activate an option.
- ___ 2 <F10> (or <Shift><Menu>) moves the location cursor to the first available menu title in a menu bar; if none of the menu titles is available, these keys do not move the location cursor.
- ___ 3 <Left> and <Right> move the location cursor between available menu titles, with wrapping between the last and first titles.
- ___ 4 <F10> (or <Shift><Menu>) moves the location cursor from the menu bar to the previous object with focus.
- ___ 5 <Down> displays the menu for the title containing the location cursor.
- ___ 6 The arrow keys move the location cursor between available options in the menu, with wrapping between the last and first options.
- ___ 7 <Right> displays a submenu if the option with the location cursor is the parent for the submenu.
- ___ 8 <Left> dismisses a submenu and returns the location cursor to its parent option.
- ___ 9 <Enter> (or <Return>, <Select>, or <Space> in Motif) activates an option and dismisses the menu.

- ___ 10 <Esc> (or <Cancel> in Motif) dismisses the menu without activating an option and returns the location cursor to the object that previously had focus.

5.2 POP-UP MENUS

5.2.1 Appearance

- ___ 1 A pop-up menu provides redundant access to frequently executed actions.
- ___ 2 Motif: A pop-up menu includes a title describing the function performed by the menu or the object to which the menu relates.
- ___ 3 Motif: The title is displayed at the top of the menu and separated from the first menu option by a separator line.
- ___ 4 If a pop-up menu contains options taken from different menus in the window, options pertaining to the object to which the menu relates are presented first, followed by edit options and then by application-specific options. A separator delimits each group of options.
- ___ 5 The pop-up menu does not contain any submenus.
- ___ 6 Motif: If a pop-up menu includes any of the following options, they are ordered: Properties, Undo, Primary Move, Primary Copy, Primary Link, Cut, Copy, Copy Link, Paste, Paste Link, Clear, Delete, Select All, Deselect All, Select Pasted, Reselect, Promote.
- ___ 7 Motif: If the menu relates to a selectable object, it also includes Move To, Copy To, Put in Workspace, Delete, and Help options.
- ___ 8 When the pointing device is used to display a pop-up menu, its contents relate to the object under the pointer.
- ___ 9 When the keyboard is used to display a pop-up menu, its contents relate to the object with the location cursor.
- ___ 10 A pop-up menu is displayed near the object with which it is associated.

5.2.2 Behavior

- ___ 1 Users display a pop-up menu by pressing or clicking BMenu.
- ___ 2 Users navigate within a pop-up menu and activate an option with either BSelect or BMenu.
- ___ 3 Releasing BMenu with the pointer in the area that activated the menu dismisses it without activating an option.
- ___ 4 Motif: Clicking BSelect or BMenu outside the menu also dismisses it.
- ___ 5 Motif: When the pop-up menu relates to a selection, the action executed by the option chosen applies to all of the elements in the selection.
- ___ 6 Motif: When a pop-up menu relates to an unselected object, the action executed applies only to that object and not to any other object(s) that might be selected.
- ___ 7 Windows: If there is no current selection, clicking BMenu on an object both selects it and displays its pop-up menu.
- ___ 8 Windows: Clicking BSelect outside the menu removes the menu and selects the object under the pointer if one is there; clicking BMenu outside the menu only removes the menu.
- ___ 9 Motif: <Shift><F10> or <Menu> displays a pop-up menu if one is available.
- ___ 10 Windows: Keyboard activation of pop-up menus is not available.
- ___ 11 The arrow keys move the location cursor between available options in a pop-up menu.
- ___ 12 <Enter> (or <Return>, <Select>, or <Space> in Motif) activates an option and dismisses a pop-up menu.
- ___ 13 <Esc> (or <Cancel>, <Menu>, or <Shift><F10> in Motif) dismisses a pop-up menu without activating an option, and the location cursor returns to the object that had focus before the menu was displayed.

5.3 TEAR-OFF MENUS (Motif Only)

5.3.1 Appearance

- ___ 1 A tear-off menu is used when users need to select repeatedly from a pull-down menu, submenu, or pop-up menu.
- ___ 2 A tear-off menu contains a tear-off button with a dashed-line graphic that is the first menu option below the title.
- ___ 3 The tear-off button behaves in the same manner as other available options in the menu.
- ___ 4 When a tear-off menu is displayed, the location cursor is on the second available option if the first option is the tear-off button.
- ___ 5 The title of the menu window is the title of the associated tear-off menu.
- ___ 6 The contents of the menu window are the same as the original menu and in the same order but the tear-off button is not displayed in the window.
- ___ 7 The options in a menu window are dimmed when unavailable.
- ___ 8 The options in a menu window behave in the same manner as options in the menu (e.g., wording changes when activated).

5.3.2 Behavior

- ___ 1 Clicking BSelect on the tear-off button dismisses the menu and displays a menu window at the menu location.
- ___ 2 Dragging the tear-off button with BTransfer displays a menu window and moves it to a new location.
- ___ 3 When a menu window is displayed, it has focus, with the location cursor on the first available menu option.
- ___ 4 Clicking BSelect on an option in a menu window moves the location cursor to the option and executes it, and the window remains displayed.
- ___ 5 The arrow keys move the location cursor to the tear-off button in a menu.
- ___ 6 When focus is on the tear-off button, <Return>, <Enter>, <Select>, or <Space> dismisses the menu and displays a menu window at the menu location. The window receives focus, with the location cursor on the first available menu option.
- ___ 7 The arrow keys move the location cursor between available options in the menu window; <Return>, <Enter>, or <Space> activates an option.
- ___ 8 A menu window can be moved but not minimized or maximized.
- ___ 9 A tear-off menu can be displayed while the menu window is open, and options can be selected from either the menu or the window.
- ___ 10 When the menu is torn off a second time, the original menu window is dismissed and a new window appears.
- ___ 11 Selecting Close in the Window menu or pressing <Esc> (or <Cancel> in Motif) when the window has focus dismisses a menu window.

5.4 OPTION MENUS (Motif Only)

5.4.1 Appearance

- ___ 1 The title of an option menu is placed to the left of the option button (above the button if space is limited) and followed by a colon.
- ___ 2 The label in the option button is the most recent option selected from the menu and includes a bar graphic.
- ___ 3 The option button is large enough to display both the longest menu option and the bar graphic; the graphic does not obscure any text displayed in the button.

5.4.2 Behavior

- ___ 1 Spring-loaded and posted methods are used to display an option menu and select an option using BSelect or BMenu.

- ___ 2 When an option is selected in option menu, it appears as the label in the option button and the menu is dismissed.
- ___ 3 When focus is on an option menu, <Space> or <Select> displays an option menu, with the location cursor on the previously selected option in the menu.
- ___ 4 The arrow keys move the location cursor between available options in an option menu.
- ___ 5 <Return>, <Enter>, <Select>, or <Space> activates an option, dismisses the menu, and displays the option in the option button.
- ___ 6 <Esc> or <Cancel> dismisses an option menu without activating an option.

5.5 MENU DESIGN GUIDELINES

5.5.1 Format of Menu Options

- ___ 1 Menu options are presented in mixed case, with the first letter of each word capitalized, except for prepositions and articles.
- ___ 2 If the option contains an acronym, it is capitalized.
- ___ 3 The menu is wide enough to accommodate the widest option and an accelerator (if one is available).
- ___ 4 Accelerators include a plus sign to indicate the keys to be pressed at the same time.
- ___ 5 The end of the menu option is separated from the start of the accelerator by at least three character widths.
- ___ 6 Menu options and accelerators are left-justified and appear on a single line.

5.5.2 Wording of Menu Options

- ___ 1 Menu options are phrased to reflect the action executed and worded in user vocabulary.
- ___ 2 The vocabulary in appendix C is used when the actions it contains are used in menu options.
- ___ 3 The wording of an action toggle option reflects the action implemented when the option is activated.
- ___ 4 The wording of an action toggle option is semantically congruent with natural usage.
- ___ 5 When an action toggle option is activated, its wording changes to reflect the action that will be executed when the option is activated again.
- ___ 6 Only one of the actions for an action toggle option appears in the menu at any time.
- ___ 7 The wording of an Undo option changes dynamically to reflect the action to be undone.
- ___ 8 The wording of a state toggle option describes the state being set.
- ___ 9 Motif: A state toggle option includes a radio or check button to the left of the option label.
- ___ 10 Motif: When a state toggle option is activated, the select state of the radio or check button changes but the wording of the option remains the same.
- ___ 11 Motif: When a radio or check button appears in a menu, it always appears as either selected or unselected and is not removed from the menu when deselected.
- ___ 12 Windows: A state toggle option does not include a radio or check button to the left of the option label.
- ___ 13 Windows: When users activate an option in a set of nonexclusive settings, a check mark is placed to the left of the option; when users activate an option in a set of exclusive settings, a dot is placed to the left of the option.
- ___ 14 Windows: When the state of a setting is indeterminate, the graphic(s) is removed from all groups for which the settings are indeterminate.
- ___ 15 If radio buttons are used in a menu, they are grouped together and delimited from other menu options by a separator.
- ___ 16 The wording of each menu option is consistent in grammatical style and matches the corresponding menu title.
- ___ 17 Verbs are used as the first word in options in pull-down and pop-up menus.

5.5.3 Grouping Options into Menus and Submenus

- ___ 1 A pull-down or pop-up menu contains no less than two or more than 15 options.
- ___ 2 An option menu contains no more than 10-12 options.
- ___ 3 Menus with more than 4 options are divided into groups based on function, with each containing no more than 4 options (unless more are logical) and a separator line between groups.
- ___ 4 If menu options are not in functional groups, order is by frequency of usage, with the most frequently executed at the top and least frequently executed at the bottom.
- ___ 5 If menu options are not ordered in logical groups or by frequency, they are presented in alphabetical or numerical order.
- ___ 6 Destructive options are at the bottom of the menu.
- ___ 7 Options that perform opposing actions are not placed adjacent to each other.
- ___ 8 If similar options are in different menus, the options are ordered in a consistent manner in each menu.
- ___ 9 Submenus are limited to two levels below the parent menu option.
- ___ 10 Submenus contain at least three options.

5.5.4 Availability of Menu Options

- ___ 1 If an option is never available to a user, it is not included in a menu.
- ___ 2 If an option is temporarily unavailable, it is included in a menu but dimmed.

5.5.5 Mnemonics and Accelerators

- ___ 1 The application uses the mnemonics in appendix C whenever it implements any of the actions listed in the appendix.
- ___ 2 Mnemonics are available in all pull-down menu titles and options.
- ___ 3 Motif: Mnemonics are available in pop-up and tear-off menus.
- ___ 4 Windows: Mnemonics are not available in pop-up menus.
- ___ 5 The character assigned as the mnemonic is included in the text label and is underlined.
- ___ 6 Whenever possible, the mnemonic is the first letter of a menu title or option; a distinctive consonant in the label is preferred over vowels.
- ___ 7 If the mnemonic is not the first character, it is the last character of the label or the first character of the second word (if there is more than one word) or a sequential number that is assigned to the label.
- ___ 8 If the mnemonic does not appear in a menu title or option, it is placed in parentheses following the label.
- ___ 9 Mnemonics are not case-sensitive.
- ___ 10 The characters selected as mnemonics in each menu bar and each menu are unique.
- ___ 11 A menu title or option has the same mnemonic whenever it appears in the application.
- ___ 12 The same mnemonic is not used for options performing opposite or contradictory actions in different menus.
- ___ 13 Pull-down menus include accelerators for frequently executed menu options.
- ___ 14 The same key combination is used for an accelerator throughout the application.
- ___ 15 Motif: Accelerators are available in pop-up menus only if the menu contains the same options and accelerators as the corresponding pull-down menu.
- ___ 16 Windows: Accelerators are not available in pop-up menus.
- ___ 17 When an accelerator is activated, the associated menu is displayed briefly and its action is applied to the window that has focus.
- ___ 18 The application uses the accelerators in appendix C whenever it implements any of the actions listed.
- ___ 19 When new accelerators are created, they are of the form “modifier+character.”
- ___ 20 Similar key(s) are used in the mnemonic and accelerator for a menu option.

6.0 CONTROLS

6.1 PUSH BUTTONS

6.1.1 Appearance

- ___ 1 A push button is used to initiate an action.
- ___ 2 A push button contains a text or graphic label, centered in the button, indicating the action executed when the button is activated.
- ___ 3 The default push button has an extra border around it.
- ___ 4 All of the push buttons in a group are the same size and wide enough to display the longest text label or largest graphic.
- ___ 5 The first letter of each word in the text label is capitalized, except for prepositions and articles.
- ___ 6 The text label includes an ellipsis if activating the push button results in another window requesting additional information being displayed.
- ___ 7 The vocabulary in appendix C is used when the actions it contains are presented in push buttons.
- ___ 8 When new vocabulary is created, it describes actions not listed in appendix C.
- ___ 9 Push button labels are verbs, stated in active voice, and describe the action taken when the button is selected.
- ___ 10 The names of actions are congruent.
- ___ 11 The same vocabulary is used to describe an action throughout the application.
- ___ 12 When “All” is used in a label, there is no ambiguity as to the referent; labels with multiple referents include the name of the object/element.
- ___ 13 Action icons have unique graphics that are unambiguous and easily distinguished from other icon graphics.
- ___ 14 Action icons representing opposite actions have graphics that mirror each other.
- ___ 15 Action icons do not contain an ellipsis, even if activating the icon displays a window.

6.1.2 Behavior

- ___ 1 Placing the pointer on a push button and clicking BSelect activates a push button.
- ___ 2 When the location cursor is on a push button, <Space> (or <Ctrl><Space> in Motif) activates the button from the keyboard.
- ___ 3 When a push button is activated, it highlights and the action it represents is executed.
- ___ 4 Releasing BSelect outside the push button does not activate the push button.
- ___ 5 <Enter> (or <Return> in Motif) activates the default push button in a window.

6.2 RADIO BUTTONS

6.2.1 Appearance

- ___ 1 Radio buttons are used in groups to select one from a set of mutually exclusive options.
- ___ 2 The radio button label defines the state being set by the user.
- ___ 3 The first letter of each word in the label is capitalized, except for prepositions and articles.
- ___ 4 If a radio button cannot be selected, its label is grayed out to indicate its unavailability.
- ___ 5 Motif: When a group of radio buttons is displayed, one of the buttons in the group is selected.
- ___ 6 Motif: Users cannot deselect all of the radio buttons in a group; instead, a radio button labeled None is provided as one of the options in the group.
- ___ 7 Windows: In radio buttons that represent a fixed set of attributes for selection, the radio button corresponding to the current attribute is selected when initially displayed.
- ___ 8 Windows: In radio buttons that represent a heterogeneous set of attributes for selection, all of the radio buttons in the group are deselected when initially displayed, and choosing any button applies the option to the entire selection.

6.2.2 Behavior

- ___ 1 Placing the pointer on a radio button or its label and clicking BSelect selects the button.
- ___ 2 Motif: Moving the location cursor to a radio button and pressing <Space> or <Select> selects the button from the keyboard.
- ___ 3 Windows: Moving the location cursor to a radio button also selects it from the keyboard.
- ___ 4 When a radio button is selected, it highlights and any other selected button in the group is deselected.
- ___ 5 When a radio button is selected, only its select state changes; no action is taken, and no window is opened.
- ___ 6 If a radio button is in a window with a default action, pressing <Enter> (or <Return> in Motif) in a radio button selects the button and executes the action.

6.3 CHECK BUTTONS

6.3.1 Appearance

- ___ 1 Check buttons are used singly or in groups to indicate a nonexclusive setting; selecting one toggles a setting or state.
- ___ 2 The check button label defines the state being set by the user.
- ___ 3 The first letter of each word in the label is capitalized, except for prepositions and articles.
- ___ 4 If a check button cannot be selected, its label is grayed out to indicate its unavailability.
- ___ 5 A check button (not two radio buttons) is used if an option can only be set to on or off.
- ___ 6 Windows: When the state of the check button for a property is indeterminate, it is filled with a gray pattern.
- ___ 7 Windows: Clicking on a check button with an indeterminate state cycles through three states, with the button indicator reflecting the current state.

6.3.2 Behavior

- ___ 1 Placing the pointer on a check button or its label and clicking BSelect selects the button.
- ___ 2 When the location cursor is on a check button, <Space> (or <Select> in Motif) selects the button from the keyboard.
- ___ 3 When a check button is selected, it highlights and includes a check mark (in Motif) or is filled with an X (in Windows), and any other selected button remains selected.
- ___ 4 When a check button is selected, only its select state changes; no action is taken, and no window is opened.
- ___ 5 If a check button is in a window with a default action, pressing <Enter> (or <Return> in Motif) in a check button selects/deselects the button and executes the action.

6.4 LABELS

- ___ 1 A label is used to display static text and graphics in a window.
- ___ 2 Static text (e.g., titles, headings, and directions) is presented in a label and not in a text field.
- ___ 3 A label cannot be selected, and it is not traversable from the keyboard.
- ___ 4 The first letter of each word in the label is capitalized, except for prepositions and articles.

6.5 TEXT FIELDS

6.5.1 Appearance

- ___ 1 A text field is used to enter and edit text.
- ___ 2 A text field includes a label describing what is to be entered in the field.

- ___ 3 The label appears to the left or above the field and has the same background color as the window in which it appears.
- ___ 4 The label is followed by a colon, and the space between it and the text field is empty.
- ___ 5 The label is grayed out if the text field is unavailable for text entry.
- ___ 6 Cues regarding the format of the text to be entered are presented in the message bar of the window if one is present; otherwise, these cues are provided in the label.
- ___ 7 If a unit of measurement is always used, it is part of the label and does not have to be entered.
- ___ 8 Cues regarding whether text entry is mandatory or optional are presented in the message bar if the window includes one; otherwise, these cues are provided in the label or are color coded in the text field itself.
- ___ 9 The label is worded to be clearly different from the labels for other text fields in the window.
- ___ 10 If the information being entered is a fixed length, the text field is the same length as the information.
- ___ 11 If length of information varies, the text field is as long as the longest information.
- ___ 12 The text field includes scroll bars if the text being entered is longer than the field or extends beyond a single line.
- ___ 13 Strings longer than 5-7 characters long are entered in smaller chunks.
- ___ 14 The field format is meaningful to users and consistent with their expectations.
- ___ 15 If dynamic noneditable text is displayed in a text field, the field has a different appearance (e.g., background color) than an editable text field.
- ___ 16 When the pointer is on a noneditable text field, its shape does not change to an I-beam.
- ___ 17 A noneditable text field is not selectable; i.e., clicking on it does not change its appearance or display a text cursor in the field.

6.5.2 Behavior

6.5.2.1 Supporting Text Entry and Manipulation

- ___ 1 Variable-length text is automatically justified during text entry.
- ___ 2 Text characters are displayed as typed by users unless a special format is required
- ___ 3 When the application presents stored text in a text field, it is displayed in a consistent format so users recognize it as such, and any text editing by users is converted into this format.
- ___ 4 Numeric data can be entered from the keyboard or the numeric keypad.
- ___ 5 The amount of data users have to enter in a text field is minimized; automatic entry of data into a text field is performed whenever possible.
- ___ 6 Windows contain an indicator when position hooking to fill a text field is available.
- ___ 7 Users are not required to enter data in a mandatory field before moving to another field.
- ___ 8 Users accept the default value in a text field by tabbing to next field in window; tabbing does not affect default.
- ___ 9 If users modify the default but do not save the change, the change does not affect the default when the window containing the field is displayed again.
- ___ 10 Autotabbing is available only when data are broken into smaller groups of characters, with each group entered in a separate text field.

6.5.2.2 Error Checking and Correction

- ___ 1 The application performs error checking on the data entered and provides feedback when errors are detected.
- ___ 2 Users can fix errors by editing individual characters in the field, rather than having to erase and retype the entire field.
- ___ 3 When users enter data in fields that are unrelated to one another, they receive feedback about an error when they tab out of the text field but they are not prevented from leaving the field.

- ___ 4 Error feedback is provided in the message bar of the window if one is present; otherwise, feedback is provided by changing the appearance of the field with the error and/or in a separate message window.
- ___ 5 When users enter data in fields that are interdependent, they receive feedback concerning the errors when they attempt to enter or save the data.
- ___ 6 Users can save the data they have entered at any time by executing an explicit action.
- ___ 7 The application informs users if any errors are present and does not accept (i.e., save) the data until all errors are corrected.
- ___ 8 The application provides feedback to indicate the data have been saved.
- ___ 9 When users enter data, all are saved, regardless of text cursor position in window.

6.6 LIST BOXES

6.6.1 Appearance

- ___ 1 A list is used to select one or more items from a set of items.
- ___ 2 The items in a list are displayed vertically, with one item per line.
- ___ 3 A vertical scroll bar appears to the right of the list when the number of items exceeds the space available.
- ___ 4 The title of the list describes its purpose or contents, appears above the list box, and is not followed by a colon.
- ___ 5 Windows: If a list is inactive (i.e., unavailable), its title is dimmed.
- ___ 6 Windows: If an item in a list is unavailable for selection, it is omitted from the list (rather than displayed as unavailable).
- ___ 7 Windows: If scrolling is not possible in a list, the stepper arrows are dimmed, the slider is removed, and the color of the trough region changes to that of the window background.
- ___ 8 A list is large enough to display 6-8 items at a time, or all of the items if there are fewer than 6.
- ___ 9 If the items are similar in length, the list is wide enough to read the items without having to scroll horizontally.
- ___ 10 If the items differ significantly in length, the list is wide enough to read the average-length items and has horizontal scroll bar.
- ___ 11 If the items in a list represent possible attribute values for a selection, the current value is selected when the list is first displayed; if the selection is heterogeneous, none of the items is selected.
- ___ 12 The items in the list appear in sequential order based on nature of items and sequence expected (e.g., chronological, alphabetical, sequential, functional, by importance).
- ___ 13 Items added to a list appear in their correct position in the list, not at the end of the list.
- ___ 14 Selecting an item does not affect the order of the items in the list.
- ___ 15 A list scrolls only in response to user action and does not scroll automatically.

6.6.1.1 Drop-Down List Boxes (Windows Only)

- ___ 1 A drop-down list is used instead of a regular list when the space available in a window is limited.
- ___ 2 A drop-down list consists of a noneditable text area showing the currently selected item, a down-pointing arrow button, and a list of items that is displayed only when opened by the user.
- ___ 3 The same guidelines concerning height and width apply to an open drop-down list as to a regular list.
- ___ 4 The arrow button abuts the text area in the drop-down list.
- ___ 5 When users select an item in the list, it is displayed in the field and the list closes.

6.6.1.2 Multiple Selection List Boxes (Windows Only)

- ___ 1 A multiple selection list box is used when users need to select multiple discontinuous items.
- ___ 2 A multiple selection list includes a check button preceding each item.
- ___ 3 When users select an item in a multiple selection list, an X appears in the check button for that item.

6.6.2 Behavior

6.6.2.1 Navigation and Selection

- ___ 1 Placing the pointer on a list item and clicking BSelect moves the location cursor to the item and selects it.
- ___ 2 If other pointing device selection methods are available in the list, they are performed as defined in table 3-1.
- ___ 3 If the window containing the list has a default action, double clicking on an item selects the item and executes the action.
- ___ 4 <Up> and <Down> move the location cursor to the previous and next items in the list; <Left> and <Right> scroll the list one character to the left and right.
- ___ 5 <PageUp> and <PageDown> move the location cursor to the item one page up and down in the list; <Ctrl><PageUp> and <Ctrl><PageDown> scroll the list one page to the left and right.
- ___ 6 <Home> and <End> scroll to the leftmost and rightmost edge of the list; <Ctrl><Home> and <Ctrl><End> move the location cursor to the first and last items in the list.
- ___ 7 Motif: Selection from the keyboard is performed as defined in table 3-2.
- ___ 8 Windows: Selection from the keyboard is performed as defined in table 3-3.

6.6.2.2 Speed Search in Lists

- ___ 1 Speed search is available in lists containing more than 10 items.
- ___ 2 Incremental search is available in lists containing more than 50 items.
- ___ 3 Speed search and incremental search are not case-sensitive; if the search has to be case-sensitive, then this information is provided to users.
- ___ 4 Feedback (e.g., an auditory signal) is provided when no match is found in a speed search or incremental search.

6.7 SCROLL BARS

6.7.1 Appearance

- ___ 1 A scroll bar is used to view information when it exceeds the space available to display it.
- ___ 2 Vertical scroll bars control backward and forward movement through the information; horizontal scroll bars control left and right movement.
- ___ 3 A scroll bar contains a trough region, a slider, and stepper arrows.
- ___ 4 Relative slider position indicates the relative position of the information displayed in window.
- ___ 5 Users are able to scroll to the top or the bottom of the information but not beyond.
- ___ 6 Windows: When a window cannot be scrolled any further, the associated stepper arrow is dimmed.

6.7.2 Behavior

- ___ 1 Pressing BSelect on a stepper arrow moves the slider one unit (i.e., a column or a line) in the arrow direction.
- ___ 2 Pressing BSelect on a trough moves the slider one page length or width minus one unit in the direction indicated.
- ___ 3 Dragging the slider with BSelect moves the slider in the pointer direction.

- ___ 4 Dragging BTransfer on the trough moves the slider to the pointer position and then moves the slider in the pointer direction.
- ___ 5 <Esc> (or <Cancel> in Motif) returns the slider to its position before the sliding operation began.
- ___ 6 When the scroll bar has focus, the arrow keys move the slider one unit in the arrow direction.
- ___ 7 <Ctrl> in combination with the arrow keys move the slider one large unit in the arrow direction.
- ___ 8 <PageUp>, <PageDown>, <Ctrl><PageUp>, and <Ctrl><PageDown> page the scrollable area in the specified direction (less one unit of overlap).
- ___ 9 <Home> or <Ctrl><Home> and <End> or <Ctrl><End> scroll to the beginning and end of the scrollable region.

6.8 SCALES AND GAUGES

6.8.1 Appearance

- ___ 1 A scale is used to select a value in a range.
- ___ 2 A scale contains a trough region, a slider for selecting a value, and a label showing the current scale value; arrow buttons may also be included for selecting a value.
- ___ 3 The trough contains tick marks and is labeled with the minimum/maximum scale values.
- ___ 4 A gauge is used to display values that cannot be changed.
- ___ 5 If a gauge is used to indicate processing, the trough region fills dynamically to indicate the relative amount of processing completed.
- ___ 6 If the exact percentage of processing completed is important, the gauge is labeled to indicate the units of measurement represented by the gauge.
- ___ 7 A gauge contains a trough region but no slider or stepper arrows.
- ___ 8 A gauge can receive keyboard focus so users can access Help for that control.

6.8.2 Behavior

- ___ 1 Pressing BSelect on a stepper arrow moves the slider one unit in the direction indicated.
- ___ 2 Pressing BSelect on the trough moves the slider one large increment in direction indicated.
- ___ 3 Dragging the slider with BSelect moves the slider in the pointer direction.
- ___ 4 Dragging BTransfer on the trough moves the slider to the pointer position and then moves the slider in the pointer direction.
- ___ 5 <Esc> (or <Cancel> in Motif) returns the slider to its position before the sliding operation began.
- ___ 6 When the scale has focus, the arrow keys move the slider one unit in the arrow direction.
- ___ 7 <Ctrl> in combination with the arrow keys move the slider one large unit in the arrow direction.
- ___ 8 <Home> or <Ctrl><Home> and <End> or <Ctrl><End> move slider to the minimum and maximum scale values.

6.9 SEPARATORS

- ___ 1 A separator is used to delimit the elements in a menu or a window.
- ___ 2 A separator does not support internal navigation.

6.10 COMBINATION CONTROLS

6.10.1 Combo Boxes

- ___ 1 A combo box contains a text field and a list box below the text field.

- ___ 2 A drop-down combo box contains a text field, an arrow button, and a list box that is displayed when the button is depressed.
- ___ 3 Users select an item from the list to display in the text field or type directly in the field.
- ___ 4 When users select an item from the list, it replaces any text in the field.
- ___ 5 The text entered in the text field does not have to match an item in the list.
- ___ 6 Windows: As users type in the text field, the list scrolls to the first item that begins with the characters being typed.
- ___ 7 The list is large enough to display 6-8 items at a time, or all of the items if fewer than 6.
- ___ 8 A vertical scroll bar is provided when the list is too long to view all of the items.
- ___ 9 In a list that can be scrolled, the location cursor does not wrap.
- ___ 10 The combo box is wide enough for users to read all of the items in the list, with the text field the same width as the list.
- ___ 11 List items appear in sequential order based on nature of items and sequence expected.
- ___ 12 If it is appropriate for users to make no choice in a combo box, the list includes a “No Choice” item that, when selected, removes any text that is displayed in the text field.
- ___ 13 When displayed, the text field can either be empty or pre-filled with default list item.
- ___ 14 The default entry is highlighted when text field has focus so typing overwrites the entry.

6.10.2 Spin Buttons

- ___ 1 A spin button is used when users have to enter no more than 20 discrete, ordered values.
- ___ 2 A spin button contains a single-line text field and up/down arrow buttons to the right of the field.
- ___ 3 The text field is editable (if all values are not included) or noneditable (if all values are included).
- ___ 4 When a spin button is displayed, the text field contains a default value.
- ___ 5 Users click on the arrow buttons to step through the value in the text field.
- ___ 6 Users press on the arrow buttons to step through the values continuously in the direction of the arrow button.
- ___ 7 When largest or smallest value is reached, the entries wrap to cycle continuously through the full range.
- ___ 8 If the text field is editable, users can type a value directly in the field.
- ___ 9 If used for DTG or lat/long, separate spin buttons are provided for each part of the entry.
- ___ 10 Spin buttons can be combined with standard text fields for data entry.
- ___ 11 If a value is typed in the text field, it is validated for correct syntax and format when users move focus out of the field.

6.11 STANDARD AND NONSTANDARD CONTROLS

- ___ 1 If a nonstandard control is used, it has as much of standard “look and feel” as possible (i.e., a 3-D appearance and similar color and shape coding).
- ___ 2 A control that is a composite of existing controls has the appearance and behavior of the component controls.
- ___ 3 All controls in the application are identifiable solely on the basis of their appearance.
- ___ 4 All controls with the same function have the same appearance.
- ___ 5 Controls that are similar in shape have distinctive visual cues.
- ___ 6 COTS software is configured to comply with the specifications in this style guide.

7.0 SYSTEM AND APPLICATION DESIGN

7.1 CDE IMPLEMENTATION IN THE DII (Motif Only)

7.1.1 The Desktop in DII Systems

- ___ 1 The system provides access to desktop management functions in a CDE-compliant manner except where the specifications presented here indicate otherwise.
- ___ 2 Each application determines the constraints for movement and deletion of objects it creates, with users allowed to perform these actions if they are granted permission to do so.
- ___ 3 If these actions are allowed, they are performed using the functionality provided by the desktop. If these actions are not allowed, the corresponding desktop features are unavailable when the application is selected; applications do not alter how these functions are performed or remove them from the desktop.
- ___ 4 The system provides a classification bar with markings indicating the current classification level.
- ___ 5 The classification bar extends across the top of the screen and cannot be obscured by application windows when they are displayed or repositioned on the screen.
- ___ 6 The classification bar displays the current classification level in the middle of the bar and may include status indicators at the left margin and a digital clock at the right margin.
- ___ 7 The classification bar uses the colors listed in appendix D.
- ___ 8 The text in the classification bar is presented in upper-case letters, with all classification terms are spelled out and no embedded spaces within words in the label.

7.1.2 Session Management

- ___ 1 The system implements a login procedure that all users must complete before they can access any system functions.
- ___ 2 The system does not allow users to access a Terminal window unless this privilege has been granted to them.
- ___ 3 The system removes the Failsafe Session and the Command Line Login features in CDE.
- ___ 4 The system does not provide options to select a language other than English unless other languages are supported.
- ___ 5 The system supports both “current” and “home” session options and allows users to select between them.

7.1.3 Application Management

- ___ 1 The system provides access to the built-in application groups in Application Manager.
- ___ 2 Users launch an application either by double clicking on its application icon in Application Manager or pressing <Return> twice when focus is on the icon.
- ___ 3 If an application uses or creates data files, users launch it when they double click on one of its file icons in File Manager or when they drop the file icon on the application icon; in this case, the data file is loaded into the application window that is opened.
- ___ 4 If an application is available in the Personal Applications subpanel in the Front Panel, users launch it by clicking on its control in the subpanel or by dragging one of its file icons from File Manager to the control.
- ___ 5 Users cannot rename or delete an application icon unless they have been granted permission to do so.
- ___ 6 Users can launch only one instance of an application; double clicking on the icon for an application that is running only raises the application window to the front of the screen.
- ___ 7 Users cannot access the Terminal Emulator application in Application Manager or launch the Terminal application in the Front Panel or from the File Menu in File Manager unless they have permission to do so.
- ___ 8 Application Manager is the single repository for applications and application groups that the system adds to the desktop; DII applications are not installed in the Front Panel or its subpanels.
- ___ 9 Only those applications which users have permission to execute are available in Application Manager; applications (and any files or folders used by the application) to which users do not have access are not visible on the desktop.

- ___ 10 Each application is represented by a single application icon.
- ___ 11 The label for the icon is the name of the application.
- ___ 12 Users can access all of the functionality in the application from the application icon.

7.1.4 File Management

- ___ 1 The system uses File Manager to display the files and folders available to users.
- ___ 2 The system limits Terminal access from File Manager to those users with this privilege.

7.1.5 Workspace Management

- ___ 1 Users can add, remove, and rename workspaces, place applications in one, some, or all available workspaces, and switch between workspaces.
- ___ 2 A Workspace menu containing options for managing the workspace is available on all workspaces.
- ___ 3 If any of the following workspace management functions are included in a Workspace menu, they are ordered: Shuffle Up, Shuffle Down, Refresh, Minimize/Restore Front Panel, Restart Workspace Manager, and Log Out.
- ___ 4 The options in the Workspace menu execute the actions listed in appendix C.
- ___ 5 The system implements Graphical Workspace Manager, provides an Application List option in the Workspace menu, and adds a Workspaces control to Style Manager.
- ___ 6 If the system uses multiple monitors, it configures the desktop to display a separate Front Panel on each screen, with each screen functioning as a unique desktop environment.

7.1.6 Style Management

- ___ 1 The system makes the standard color, font, backdrop, keyboard, mouse, beep, windows, and startup controls available to users in Style Manager.
- ___ 2 The system supports the Screen With Lock extension to the Screen control so that users can choose to enable or disable a screen saver and screen lock on timeout.
- ___ 3 If the system is installed in an office-like environment, it implements the color palettes listed in appendix D.
- ___ 4 If the system is installed in another environment, it defines system-specific palettes and makes them available to users in the Color control in Style Manager.
- ___ 5 The system implements the centralized color management capability provided by the desktop so that applications change color dynamically when users select a different palette.
- ___ 6 Applications that cannot use dynamic colors use the DII default palette as their color set.
- ___ 7 The system implements the centralized font management capability provided by the desktop, using the default fonts defined by the platform on which the system is installed.
- ___ 8 Applications use the fonts for which font aliases are defined in CDE.

7.2 APPLICATION DESIGN IN THE DII

7.2.1 Applications Providing Centralized Task Management

7.2.1.1 Basic Implementation

- ___ 1 Launching the application opens the window with application control.
- ___ 2 Primary windows have a Close menu option or a Close push button, both of which close all of the windows in the family parented by the window and quit processing in the window.
- ___ 3 An Exit option is available only from the menu bar of the application control window; selecting this option closes all windows and quits processing in the application.
- ___ 4 The title of the window with application control is the name of the application.
- ___ 5 Other primary windows are identified by application and task name.

- ___ 6 Primary windows in which a file has been loaded are identified by application name, followed by a hyphen, and the name of the file.
- ___ 7 Secondary windows are identified by application name, followed by a colon, and the name of the window.

7.2.1.2 Nested Implementation

- ___ 1 The parent segment provides application control for the overall application.
- ___ 2 The application icon on the desktop is named for the parent segment; double clicking on the icon launches this segment.
- ___ 3 Closing a primary window in the parent segment has no effect on windows in a child segment.
- ___ 4 Exiting the window with application control in the parent segment closes all of the windows and quits processing in both parent and child segments.
- ___ 5 The child segment is not available on the desktop and can only be launched from within the parent segment.
- ___ 6 A Close option is available from the menu bar of the primary window(s) in the child segment; selecting this option closes all windows in the family parented by the window and quits processing in the window.
- ___ 7 The name of the parent segment is used as the application name in the title of all primary windows in the child segment.

7.2.2 Applications Providing Distributed Task Management

7.2.2.1 Basic Implementation

- ___ 1 A pop-up menu is attached to the application icon listing all of the top-level tasks in the application.
- ___ 2 Double clicking on the application icon launches the default task and opens its primary window.
- ___ 3 Selecting one of the tasks from the pop-up menu launches the task, opens its primary window, and changes the menu option to unavailable.
- ___ 4 Each primary window includes menu options from which all of the other top-level tasks in the application can be accessed.
- ___ 5 Close and Exit options are available from the menu bar of each primary window in the application; selecting either of these options closes all windows in the family parented by the window and quits processing in the window.
- ___ 6 Exiting the last primary window in the application also exits the application.
- ___ 7 Primary windows in the application are identified by task name.
- ___ 8 Secondary task windows are identified by task name, followed by a colon, and then the name of the secondary window.

7.2.2.2 Resource Sharing Among Applications

- ___ 1 Each mission and support application is closed and exited independently; executing these actions in any of the applications affects only the windows in the application.
- ___ 2 When a support application is launched from within a mission application but is not shared, the latter application can provide an Exit All option to exit both it and the support application.
- ___ 3 When a support application is launched as a shared resource and one of the mission applications is exited, the shared window remains open but the data from the application being exited are removed from the window; an Exit All option is not available.

7.2.3 Other Design Considerations

7.2.3.1 Icon Design in CDE (Motif Only)

- ___ 1 The icons for the application have a common theme, with individual icons tailored to reflect specific application functions.
- ___ 2 Icon graphics have a three-dimensional style.
- ___ 3 The shape of a container icon provides cues as to its function and the kind of objects it contains.
- ___ 4 A document or file icon indicates what application is associated with the document or file and the kind of data stored in the icon.
- ___ 5 If an application supports multiple file formats, document icons use the same basic file graphic but have a different “tag” to distinguish each output format.

7.2.3.2 Accessing Segments Within an Application

- ___ 1 If menus in the application become excessively long, it uses submenus to reduce menu length.
- ___ 2 Menus that cannot be shortened include controls for viewing and selecting the options that extend beyond the button of the screen.
- ___ 3 The application determines when users can and cannot access each of the tasks performed by a segment and dims the associated menu option to indicate its unavailability.

8.0 APPLICATION WINDOW DESIGN

8.1 PRIMARY AND SECONDARY TASK WINDOWS

8.1.1 Window Components

- ___ 1 A primary task window contains a window frame with resize borders, Window menu, Minimize, and Maximize buttons, and a title bar.
- ___ 2 Motif: The Window menu in a primary task window contains (in this order) Restore, Move, Size, Minimize, Maximize, Lower, Occupy Workspace, Occupy All Workspaces, Unoccupy Workspace, and Close options.
- ___ 3 Windows: The Window menu in a primary task window contains (in this order) Restore, Move, Size, Minimize, Maximize, and Close options and may include Switch To and Next options.
- ___ 4 A primary task window includes a menu bar and may include a message bar.
- ___ 5 A secondary task window contains a window frame with resize borders, a Window menu, and a title bar; the window may also contain Minimize and Maximize buttons.
- ___ 6 Motif: The Window menu in a secondary task window contains (in this order) Restore, Move, Size, Minimize (if available), Maximize (if available), Lower, and Close options.
- ___ 7 Windows: The Window menu in a secondary task window contains (in this order) Restore, Move, Size, Minimize (if available), Maximize (if available), and Close options.
- ___ 8 A secondary task window includes a menu bar at the top or an action area at the bottom; the window may have a message bar.

8.1.2 Window Design Guidelines

8.1.2.1 Window Title

- ___ 1 The window title is centered in the title bar and presented in mixed case, with the first letter of each word capitalized.
- ___ 3 If a file name is included in the title, it is in mixed case in Motif and in upper case letters (including any extensions) in Windows.
- ___ 3 Each window title in the application is unique.

- ___ 4 The title does not contain version/path information and does not present information that changes dynamically.
- ___ 5 If selecting a menu option causes a secondary window to be displayed, the title of the window matches or refers to the wording of the option that displayed it.

8.1.2.2 Menu Bar

- ___ 1 If a window includes a menu bar, it appears below the title bar.
- ___ 2 The menu bar contains no more than ten menu titles plus Help.
- ___ 3 Motif: Menu titles begin at the left margin and extend rightward, with Help at the right margin.
- ___ 4 Windows: Menu titles begin at the left margin and extend rightward; Help is the last menu and placed next to the preceding menu title.
- ___ 5 The space between menu titles is sufficient (at least three character widths) so that multi-word titles can be distinguished from single-word titles.
- ___ 6 Commands (e.g., push buttons) are not included in a menu bar.

8.1.2.3 Common Menus

- ___ 1 Motif and Windows conventions concerning menu design and content are followed except as needed to provide access to application-specific functions.
- ___ 2 If any common menus are used, they are ordered: File, Edit, View, Options, Window (Windows only), Help.
- ___ 3 The first menu contains options for users to work with the data in the window as a whole; the title of this menu is File or an application-specific term with comparable meaning.
- ___ 4 Motif: If a File menu includes any of the following options, they are ordered: New, Open, Save, Save As, Print, Close, and Exit. Separators follow Open, Save As, and Print options.
- ___ 5 Windows: If the File menu includes any of the following options, they are ordered: New, Open, Close (if available), Save, Save As, Print, Print Setup, and Exit. Separators follow the Save As and Print Setup options.
- ___ 6 Windows: If the File menu includes a list of most recently used files, the list precedes the Exit option.
- ___ 7 Windows: Selecting an option with a file name opens a window containing the file; if the file is already open, selecting the option raises that window to the front.
- ___ 8 Windows: The number of files in the list ranges from three to eight but remains constant within the application.
- ___ 9 Windows: When a file is opened, the file name is placed at the top of the list in the File menu and given the number 1 which is used as its mnemonic; when another file is opened, it is added to the top of the list (and given the number 1) and the previously opened files move down in the list.
- ___ 10 If an Edit menu is present, it contains options for users to modify the data in the window.
- ___ 11 If File and Edit are both present, they are next to each other in the menu bar.
- ___ 12 Motif: If an Edit menu includes any of the following options, they are ordered: Undo, Cut, Copy, Copy Link, Paste, Paste Link, Clear, Delete, Select All, Deselect All, Select Pasted, Reselect, Promote. A separator follows the Undo, Paste Link, and Delete options.
- ___ 13 Windows: If an Edit menu includes any of the following options, they are ordered: Undo, Repeat, Cut, Copy, Paste, Paste Special, Clear, Delete, Select All, Find, Replace, and Links. Separators follow the Repeat, Select All, and Replace options.
- ___ 14 If a View menu is present, it contains options for changing the user's view of the data but does not actually change the data.
- ___ 15 If an Options menu is present, it contains options for customizing the application.
- ___ 16 Windows: If a Window menu is present, it contains options for manipulating document windows.

- ___ 17 Windows: The Window menu includes a New Window option, followed by window arrangement commands, and finally a list of open windows.
- ___ 18 Windows: Selecting a window name from the Window menu raises that document window to the front and gives it focus.
- ___ 19 Windows: The active window is indicated by a check mark preceding the window name in the Window menu.
- ___ 20 Windows: The Window menu contains up to nine window names; if more than nine windows are open, the menu includes a More option that displays a dialog window with the names of all open document windows.
- ___ 21 The Help menu provides access to additional information about the window or the application.
- ___ 22 Motif: If the Help menu includes any of the following options, they are ordered: Overview, Index, Table of Contents, Tasks, Reference, Tutorial, Keyboard, Mouse, Mouse and Keyboard, On Item, Using Help, and About.
- ___ 23 Motif: The minimum set of options in a Help menu is Overview, Tasks, Reference, On Item, Using Help, and About <application> options and may include a Keyboard option.
- ___ 24 Windows: If the Help menu includes any of the following options, they are ordered: Contents, Search for Help On, Tutorial, How to Use Help, and About.

8.1.2.4 Arrangement of Controls

- ___ 1 Controls performing a similar/related function are grouped together and surrounded by a frame.
- ___ 2 If a heading is included, it is a label describing the function performed by the controls in the group.
- ___ 3 The heading is placed inside the frame or in the frame.
- ___ 4 If the heading is longer than the text in controls, the frame size is extended to be wider than the heading.
- ___ 5 The heading is either left justified or centered within the frame.
- ___ 6 The heading is in mixed case, following normal capitalization rules, and not followed by a colon.
- ___ 7 The preferred orientation for a group of radio or check buttons is vertical and left-aligned.
- ___ 8 If a group of radio or check buttons is placed horizontally, space is sufficient (at least twice the distance between the button and its label) so the button is paired with the label on the right, not left.
- ___ 9 When a window is displayed, all of the controls reflect current state of the application.
- ___ 10 If there is an expected choice in a group of controls, it is selected (i.e., highlighted) when the window is initially displayed.
- ___ 11 Controls that are temporarily unavailable are dimmed and not available for selection.
- ___ 12 Controls that are never available to users do not appear in a window.
- ___ 13 When a control is selected but not executed, the selection is not saved and the control reverts to its original state when the window was first displayed.

8.1.2.5 Availability of Scroll Bars and Window Panes

- ___ 1 If a scrollable area is sized too small to view all of the contents, scroll bars are provided to allow scrolling of the area.
- ___ 2 If scroll bars are needed, they are located to the right or at the bottom of the area being scrolled.
- ___ 3 Scroll bars scroll the main part of window only and not the menu bar or message bar in the window.
- ___ 4 Motif: A scrollable window always displays its scroll bars regardless of whether the viewable window is the same size or smaller than the underlying data.
- ___ 5 Windows: Scroll bars remain displayed even if they become inactive.

- ___ 6 Window panes are used to separate control areas when space is limited or to present two simultaneous views of the same data in a single window.
- ___ 7 Motif: Users resize panes by dragging the boundary between the panes using BSelect or BTransfer or by moving the sash using the arrow keys.
- ___ 8 Motif: Making one pane larger makes the other pane smaller but not affect the overall size of the window.
- ___ 9 Windows: Users drag the split box to divide the window into separate panes; double clicking on the split box divides a window in the middle.
- ___ 10 Windows: Dragging the split box or split bar to either end of the window closes the pane in the direction of the drag.
- ___ 11 Windows: When a window is split, scroll bars are displayed so that users can scroll each pane independently within the window.

8.1.2.6 Arrangement of Push Buttons

- ___ 1 Motif: Push buttons are displayed horizontally, centered at bottom of the window, and separated from other controls with a separator.
- ___ 2 Motif: Push buttons are ordered left to right based on sequence of use, with the one most often used on the left.
- ___ 3 Motif: Buttons for positive actions are on the left, followed by buttons for negative and canceling actions.
- ___ 4 Motif: Every window includes a Help push button which is the rightmost button.
- ___ 5 Windows: Push buttons are placed across the bottom of a window.
- ___ 6 Windows: Buttons that initiate actions are placed at the left, followed by “GoTo,” “GoSub,” and Help buttons.
- ___ 7 Windows: If there is an OK button, it is placed first and followed by Cancel, with both separated from the other buttons; if there is no OK button, Cancel follows the other action buttons but precedes the “GoTo,” “GoSub,” and Help buttons.
- ___ 8 Push buttons appear in the same order throughout the application.
- ___ 9 The window contains no more than 7 push buttons, including Help.
- ___ 10 Close and Cancel are not included as push buttons in the same window.
- ___ 11 Windows: If the actions performed in a window make irreversible changes to data, the label of the Cancel button changes to Close as soon as the first such action is executed. When the window is closed and then reopened, the button label reverts to Cancel.
- ___ 12 If push button actions affect different objects in the window, their labels reflect what each affects and they are placed near the object(s) to which they relate.
- ___ 13 Motif: Separate push buttons are provided for mutually exclusive actions; the one that is unavailable is grayed.
- ___ 14 Windows: If the function performed by a push button changes depending on the state of the application, the label changes accordingly; a single push button, rather than separate buttons, is used in the window.
- ___ 15 Windows: If a “GoTo” or “GoSub” window can be opened as a result of a menu selection, the window title is the same as the menu option.
- ___ 16 Windows: If users open a “GoSub” window, make changes in the window that cannot be undone, and then return to the parent window, selecting Cancel in the parent cancels all changes made in both the parent and child windows.

8.1.2.7 Default Push Buttons

- ___ 1 If a default action is available in the window, it is the action that users are most likely to execute in the window.
- ___ 2 If an expected choice cannot be anticipated, there is no default defined for the window.
- ___ 3 If there is no default button in a window, <Enter> (or <Return> in Motif) has no effect; users have to select one of the available push buttons to execute an action.

- ___ 4 Motif: When a window is initially displayed, the default push button is the leftmost button in a group of push buttons.
- ___ 5 The same push button is the default whenever the window is displayed.
- ___ 6 When focus is on a push button, its action is the default and it is shown with default highlighting.
- ___ 7 The default highlight moves with the location cursor during keyboard navigation in a group of push buttons and returns to the original button when focus leaves the push button group.
- ___ 8 If the default action in a window varies, one push button always shows the default highlighting except when there is no default action currently available.
- ___ 9 If focus is outside a window, the default highlight is displayed on the push button whose action will be the default when focus returns to the window.
- ___ 10 When more than one action is available in a window, the default push button is the nondestructive one.
- ___ 11 If the default highlight moves to a push button other than the one originally identified as the default, the highlight reverts to the original button when the window is closed and then opened again.
- ___ 12 The action performed by the default push button is reversible.

8.1.2.8 Tool Bars

- ___ 1 If a tool bar is included in a window, it provides redundant access to actions and settings available elsewhere in the window.
- ___ 2 Motif: A tool bar is used only in windows with a menu bar; if present, the tool bar is located at the top of the window, below the menu bar.
- ___ 3 Motif: The tool bar is the same width as the window and the same height as the menu bar.
- ___ 4 Windows: If a tool bar is placed in a separate dialog window, it is always displayed in front of the window to which it applies.
- ___ 5 Windows: The dialog window with the tool bar includes a title bar and a Window menu with Move and Close options.
- ___ 6 A window with a tool bar includes a message bar so that information about individual buttons can be provided to users.
- ___ 7 Users can hide or show a tool bar.
- ___ 8 Motif: A tool bar contains no more than 20 buttons; the buttons are of equal size and evenly spaced across the tool bar.
- ___ 9 Motif: The buttons in a tool bar are arranged in an order expected by users or by frequency or sequence of use or importance.
- ___ 10 A toolbox (i.e., a toolbar placed along the left margin of a window) contains groups of action buttons arranged vertically, with no space between the buttons.
- ___ 11 The normal appearance of a button is raised; when selected, the button is recessed and changes appearance to indicate its selected state.
- ___ 12 A button that becomes unavailable changes appearance (e.g., is grayed out) to show it cannot be selected.
- ___ 13 Whenever a menu option becomes unavailable, the corresponding button in the tool bar is also shown as unavailable.
- ___ 14 The icon graphics are the same size in each button in the toolbar.
- ___ 15 Windows: The graphic image is a black outline, with white fill within the outline where needed.
- ___ 16 The icons depict a before/after representation, the tool to perform the action, or the action itself.
- ___ 17 Windows: If text is included with the graphic, button size is larger and dependent on text length.
- ___ 18 Windows: If text is included with the graphic, the graphic is placed either above the text or to the left of the text.
- ___ 19 A button remains selected as long as the mode invoked by button is in effect.

- ___ 20 The pointer shape changes to indicate type of operation users can perform in the mode.
- ___ 21 The pointer retains its modified shape whenever it is in window where the mode is in effect.
- ___ 22 If the pointer is outside the window with the mode, it changes to the appropriate shape.
- ___ 23 A tool bar either provides a button for returning to an unselected state or automatically returns to an unselected state after an action is executed.

8.1.2.9 Message Bar

- ___ 1 If a window includes a message bar, it presents noncritical application messages to users.
- ___ 2 When the message bar is used to indicate status, a progress message is displayed when the action is initiated and updated when the action is completed; the text is removed from the message bar within 5 sec of action completion.
- ___ 3 A message bar contains read-only text; users cannot type or modify any text in this area.
- ___ 4 Motif: The margin area at the bottom of the window is widened so that messages can be presented there.
- ___ 5 Windows: If a status bar is used in a window, the application provides users with a way to hide or show the bar as desired.

8.1.2.10 Draggable Objects in Windows (Motif Only)

- ___ 1 An icon is included in a window to indicate that it contains a draggable object.
- ___ 2 The icon graphic is the same as the one used to represent the object in the File Manager on the desktop.
- ___ 3 The icon is placed next to any display of the contents of the object if one is present in the window, or in the upper right corner if there is no such display.
- ___ 4 The icon includes a label describing the kind of object the icon graphic represents.
- ___ 5 The icon graphic is used as the source indicator in the drag icon.

8.1.2.11 Pop-up Menus and Text Fields in Windows

- ___ 1 Pop-up menus are provided for those elements in a window for which redundant access to frequently executed functions would improve task performance.
- ___ 2 Windows: Read-only pop-up text fields are used to display additional information about the text in a field when space within a window is limited.
- ___ 3 Windows: The presence of a pop-up field is indicated by underlining the word(s) in the text to which it relates.
- ___ 4 Windows: Clicking BSelect on the underlined text displays the pop-up field; clicking anywhere outside the field dismisses it.
- ___ 5 Windows: When the field is displayed, it is placed so that its top left corner is at the same position as the top left corner of the original text.

8.1.2.12 Mnemonics and Accelerators in Windows

- ___ 1 Windows: Mnemonics are available as an additional method for keyboard navigation among controls in a window.
- ___ 2 Windows: When mnemonics are implemented in a window, they behave as indicated in section 3.4.2 and 5.5 and use the characters listed in appendix C.
- ___ 3 Windows: The OK and Cancel push buttons do not have mnemonics.
- ___ 4 Accelerators are not assigned to individual controls in windows.

8.1.2.13 Document Windows (Windows Only)

- ___ 1 A document window has the same window components as a primary window.

- ___ 2 The Window menu in a document window contains the same options as this menu in the application window.
- ___ 3 The title of a document window is the name of the document and presented in mixed case.
- ___ 4 Document windows appear within the borders of the application window.
- ___ 5 When a document window is maximized, the window is closed; the data are displayed in the application window, its title changes to include the document name, the Window menu button from the document window and a Restore button are added to its menu bar, and a scroll bar is displayed if the document requires scrolling.

8.2 DIALOG WINDOWS

8.2.1 Window Components

- ___ 1 A dialog window contains a window frame, a Window menu button, and a title bar; the window does not have resize borders or Minimize or Maximize buttons.
- ___ 2 The Window menu in a dialog window contains (in this order) Move and Close options.
- ___ 3 Windows: If a dialog window is not movable, it does not have a title bar, and Move is not an option in the Window menu.
- ___ 5 The main area includes a control area for presenting messages or controls and a push button area at the bottom of the window for executing actions.
- ___ 6 Motif: Message windows are modeless whenever possible; an error message window is modal only if it is critical that users acknowledge having read the message prior to continuing to interact with the application.
- ___ 7 Windows: Critical message windows are system modal while information and warning message windows are application modal.
- ___ 8 Windows: The frame of a modal window has a colored inner border; the frame of a modeless window does not.

8.2.2 Window Design Guidelines

- ___ 1 Motif: The title of a dialog window includes the name of the application and describes the purpose of the dialog window.
- ___ 2 Motif: A dialog window contains a separator between the control area and action area of the window.
- ___ 3 Windows: The title of a message window is the application name and does not include the word "Error."
- ___ 4 If a dialog window includes a text message, it uses language that is meaningful to users and requires no further documentation or translation.
- ___ 5 The text in a message is left justified within the window.
- ___ 6 In messages with more than one sentence, the important information is placed at the start of the message.
- ___ 7 The message is worded so that the action required appears as a push button in the window.
- ___ 8 The application does not use a timed-information window, then resume processing on its own.
- ___ 9 A dialog window contains at least one push button that either performs the dialog window action and dismisses it (e.g., OK) or dismisses the window without taking any action (e.g., Cancel).
- ___ 10 A default push button is available in each dialog window in the application.
- ___ 11 If an action executed in a dialog window results in an error that generates an error message window, the dialog window remains displayed while the error window is presented and then dismissed.
- ___ 12 Push button order in modal dialog windows is OK/Cancel/Help, with OK as the default.

- ___ 13 Push button order in modeless dialog windows is OK/Apply/Cancel/Help or OK/Apply/Reset/Cancel/Help; OK is the default in windows that perform single actions and Apply is the default in windows that perform multiple actions.
- ___ 14 <Esc> (or <Cancel> in Motif) has the same effect as selecting the Cancel push button in the window.
- ___ 15 Auditory feedback accompanies message windows containing critical information.
- ___ 16 Users can set the level of auditory feedback or disable it temporarily as needed.

8.2.3 Message Dialogs (Motif Only)

8.2.3.1 Error Message Windows

- ___ 1 An error window is displayed to inform users when an error occurs.
- ___ 2 An error window includes the error symbol, a text message, and OK/Help or Continue/Cancel/Help push buttons.
- ___ 3 The message in an error window describes the error, why it happened, and what should be done to correct it.

8.2.3.2 Information Message Windows

- ___ 1 An information window is displayed to convey noncritical information to users.
- ___ 2 An information window includes the information symbol, a text message, and OK or OK/Help push buttons.

8.2.3.3 Question Message Windows

- ___ 1 A question window is displayed to request clarification of a previous user response.
- ___ 2 A question window includes the question symbol, a text message, and Yes/No/Help push buttons.

8.2.3.4 Warning Message Windows

- ___ 1 A warning window is displayed to convey critical information on user actions and to allow users to cancel a destructive action.
- ___ 2 A warning window includes the warning symbol, a text message, and Yes/No/Help or Continue/Cancel/Help push buttons.
- ___ 3 An audio signal accompanies the window to alert users to the warning.

8.2.3.5 Working Message Windows

- ___ 1 A working window is displayed to inform users when processing time exceeds 10 sec or when users need to cancel an operation in progress.
- ___ 2 A working window includes the working symbol, a text message, and an OK push button, and may include Cancel and Stop push buttons.
- ___ 3 Cancel interrupts the operation and returns the application and data to its state before the operation was activated.
- ___ 4 Stop interrupts the operation but does not reverse any changes already caused by the operation.
- ___ 5 During lengthy processing (in excess of 1 min), a working window is updated to indicate status of processing if update information is available.
- ___ 6 A working window remains displayed until the action is complete, the window doing action is minimized, or the user selects Cancel.
- ___ 7 When processing is complete, the working window is removed (without user action).

- ___ 8 Users can cancel the operation in progress, with confirmation required if unsaved data will be lost.

8.2.4 Message Dialogs (Windows Only)

8.2.4.1 Information Message Windows

- ___ 1 An information message window is displayed to provide information about the results of commands.
- ___ 2 An information message window contains the information symbol, a text message, and OK or OK/Help push buttons.

8.2.4.2 Warning Message Windows

- ___ 1 A warning message window is displayed to present error information or to allow users to cancel a destructive action.
- ___ 2 A warning window contains the warning symbol, a text message, and a push button for each choice available in the window plus a Help button.
- ___ 3 If the message text is worded as a question, the window includes Yes/No/Help push buttons.

8.2.4.3 Critical Message Windows

- ___ 1 A critical message window is displayed to present messages that must be corrected before users can continue to work in the application.
- ___ 2 The window contains the critical symbol, a text message, and push buttons for each choice available in the window plus Help.

8.2.5 Selection Dialogs (Motif Only)

8.2.5.1 Command Windows

- ___ 1 A command window is displayed when users need to enter keyboard commands.
- ___ 2 A command window includes a list displaying the command history and a text field for entering new commands but has no push buttons.
- ___ 3 The list box includes a vertical scroll bar when the command history exceeds the visible area in the list.
- ___ 4 The command history is cleared whenever the application is exited, and is resumed when the application is launched again.
- ___ 5 The text field is wide enough for users to view and read an entire command; a horizontal scroll bar is not included unless command lines are unusually long.
- ___ 6 Selecting an item from the list displays it in the text field.
- ___ 7 <Enter> or <Return> executes a command and adds it to the bottom of command history list.
- ___ 8 <Tab> moves the location cursor between the list and the text field.
- ___ 9 When focus is on the text field, <Up>, <Down>, <Ctrl><Home>, and <Ctrl><End> move the location cursor among items in the list and change the contents of the text field.

8.2.5.2 Prompt Windows

- ___ 1 A prompt window is displayed to request information needed to continue processing.
- ___ 2 A prompt window includes a message stating what information is needed, a text field for typing, and OK/Cancel/Help, OK/Apply/Cancel/Help, or OK/Apply/Reset/Cancel/Help push buttons.
- ___ 3 The text field has keyboard focus when a prompt window is initially displayed.

8.2.5.3 Selection Windows

- ___ 1 A selection window is displayed when users need to make a selection from a list of choices.
- ___ 2 A selection window contains a list box displaying the choices available, a text field for entering/displaying a choice, and OK/Apply/Cancel/Help push buttons.
- ___ 3 Both the list and text field include a heading that describes their contents.
- ___ 4 The list has a vertical scroll bar when number of items exceeds the visible area in the list.
- ___ 5 Selecting an item from the list displays it in the text field.
- ___ 6 If users type in the text field, the list scrolls to that item.
- ___ 7 If the text typed in the text field does not match any items in the list, users are prompted to add the item to the list.
- ___ 8 When users select OK or press <Enter> or <Return>, the selection is executed and the window closed.
- ___ 9 <Tab> moves the location cursor between the list and the text field.
- ___ 10 When focus is on the text field, <Up>, <Down>, <Ctrl><Home>, and <Ctrl><End> move the location cursor among items in the list and change the contents of the text field.

8.2.5.4 File Selection Windows

- ___ 1 A file selection window is displayed when users need to choose a file or directory.
- ___ 2 The window contains a text field for displaying and editing the current directory path, list boxes for displaying directory and file names, a text field for displaying and editing a file name, and OK/Update/Cancel/Help push buttons.
- ___ 3 When the window is used to specify an existing file, the OK push button is replaced with Open and it is the default action.
- ___ 4 When the window is used to specify a new file name, the OK push button is replaced with Save and it is the default action.
- ___ 5 The items in the Directory and File lists are presented in alphabetical order, with the first item in the Directory list the parent directory and labeled “..”.
- ___ 6 The window does not display hidden (i.e., dot) directories or files unless users need access to these types of files; if access is required, the window includes a check button to show or hide these files.
- ___ 7 The Directory text field presents the full path name; the File text field and the lists in the window shows relative path names.
- ___ 8 When users open the file selection window associated with a particular primary window, the directory location displayed is the default for that primary window.
- ___ 9 If users change the directory and then reopen the file selection window, the directory location is the one that was previously set by the user.
- ___ 10 When users close the primary window, the directory location in the file selection window reverts to the default for the primary window.
- ___ 11 If the application supports multiple primary windows, the directory reverts to the default defined for that primary window.
- ___ 12 When users open a file selection window, the File text field has keyboard focus.
- ___ 13 When users open a file selection window, the File list displays the contents of the current directory.
- ___ 14 The File list is updated when users edit the Directory text field and press <Enter> or <Return> or when they select a directory in the File list.
- ___ 15 When users select a file from the File list, the file name appears in the File text field.
- ___ 16 The application executes the selection(s) in the window when users select an item in the File list and activate the OK (or comparable) push button, when users double click BSelect on an item in the File list, or when users select a file name and press <Return> or <Enter> when the File text field has keyboard focus.
- ___ 17 Users are prompted to confirm the action executed in the window if the action will overwrite an existing file.

8.2.5.5 Print Dialog Windows

- ___ 1 A print dialog window is displayed when users need to select options for printing a file, a selection, or other type of object.
- ___ 2 The window contains a common area with standard information about the print job, an optional area with information specific to the application or function, and Print/Cancel/Help push buttons.
- ___ 3 The common area, located in the top part of the window, displays the name of the file or object type and includes controls for entering the printer destination, the number of copies desired, and the text to appear on the banner page, if any.
- ___ 4 The default entry in the Printer Destination control is the printer that is the default destination in the system; users can select or type any other valid printer name; the application saves the last user entry in this field and displays it when the window is opened again.
- ___ 5 The same information is presented in the common area in all print dialogs, with any application-specific controls placed in the optional area in the lower part of the window.
- ___ 6 If Reset and Print Preview actions are included in the window, they are available as push buttons and inserted between the Print and Cancel buttons.
- ___ 7 Separators are used between the common area, the optional area, and the push buttons.

8.2.6 Selection Dialogs (Windows Only)

8.2.6.1 File Open and File Save Windows

- ___ 1 The standard File Open window is used to choose a file or directory.
- ___ 2 The window contains a noneditable text area displaying the current position in the directory tree, list boxes for displaying directory and file names, a text field for displaying and editing a file name, drop-down lists for selecting drives and file types, and OK and Cancel push buttons.
- ___ 3 Users navigate in the window by either selecting from the Drives or Directories control or by typing this information in the File Name text field; when users switch to a new drive, the contents of the Directories list shows the contents of this drive, with the root directory at the top.
- ___ 4 Users can select a file by either typing in the File Name text field or selecting one of the items in the list box below the text field; if desired, users can filter the types of files included in this list by selecting a file type from the List Files of Type drop-down list.

8.6.2.2 Print Windows

- ___ 1 The standard Print window is used to submit a print job.
- ___ 2 The window identifies the printer to which the job will be sent and contains controls for specifying the print range, print quality, and number of copies and choosing to print to file or to collate the copies.
- ___ 3 These controls appear in the common part of the Print window, with application-specific controls available in an optional area in the lower part of the window.

9.0 INFORMATION PRESENTATION

9.1 TEXT INFORMATION

9.1.1 Text Font, Size, and Style

- ___ 1 Text is presented using the default font, size, and style defined by CDE or Windows.
- ___ 2 When a choice of fonts is available to the application, a sans serif bold font is used.

- ___ 3 Minimum text character height is 1/200th of the viewing distance.

9.1.2 Capitalization, Grammar, and Punctuation

- ___ 1 All text (including titles and major headings) is presented in mixed-case, following standard capitalization rules.
- ___ 2 Upper-case letters are used for acronyms and abbreviations and for emphasis in text.
- ___ 3 Arabic rather than Roman numerals are used when information has to be numbered.
- ___ 4 Continuous text is phrased in simple sentences, in the affirmative, and in active voice.
- ___ 5 A sequence of events or steps is presented in the order the steps are performed.
- ___ 6 The referent for “it” or “they” in a sentence is easily identified.
- ___ 7 Normal punctuation rules are followed, and contractions and hyphenation are avoided.
- ___ 8 Paragraphs are kept short and separated by at least one blank line.

9.1.3 Acronyms and Abbreviations

- ___ 1 Acronyms and abbreviations are used only if they are shorter than the full name and commonly understood by users.
- ___ 2 Abbreviations are the shortest possible length that will ensure uniqueness.
- ___ 3 Abbreviations are used consistently throughout the application.
- ___ 4 Words not commonly abbreviated are not abbreviated.
- ___ 5 Acronyms and abbreviations comply with relevant MIL-STDs.
- ___ 7 A dictionary is available (e.g., in Help) for decoding abbreviations/acronyms.

9.1.4 Formats for Date/Time and Latitude/Longitude

- ___ 1 The format for presenting date information is YYMMDD.
- ___ 2 The format for presenting time information is HHMM[SS]Z.
- ___ 3 The format for date/time group is DDHHMMZ MMM YY.
- ___ 4 Latitude/longitude information is displayed in separate fields, with Lat/Long labels.
- ___ 5 The format for latitude information is D{D}H or DD{MM{SS}}H.
- ___ 6 The format for longitude information is D{D{D}}H or DDD{MM{SS}}H.

9.1.5 Wild Card Characters in Text Searches

- ___ 1 Users can enter wild card characters to search for specific text patterns.
- ___ 2 @ searches for the occurrence of a single upper- or lower-case alphabetic character.
- ___ 3 # searches for the occurrence of a single numeric character.
- ___ 4 ? searches for the occurrence of a single alphanumeric character.
- ___ 5 * searches for the occurrence of zero or more alphanumeric characters.

9.1.6 Presenting Tabular Information

- ___ 1 Each column of tabular information has a heading and is clearly separated (by at least four character spaces) from information in other columns.
- ___ 2 Data groupings are indicated by blank space, separator lines, and/or different intensity levels; multiple colors are used only if they provide additional meaning.
- ___ 3 Alphabetic information is left-justified; integers are right-justified; decimal information is justified on the decimal point.
- ___ 4 Long strings of numbers are delimited with spaces or commas; leading zeros are not used.
- ___ 5 If the information extends beyond a line, additional lines are indented to indicate they are continuations.
- ___ 6 Tabular information is arranged in sequential, spatial, alphabetical, functional, or chronological order.

- ___ 7 Information that is important, requires immediate response, and/or is frequent is presented first in the table.

9.2 GRAPHICAL INFORMATION

9.2.1 Line Graphs and Surface Charts

- ___ 1 Line graphs are used to present trend, spatial, time-critical, or imprecise information.
- ___ 2 The axes of the graph are clearly labeled and include the unit of measurement as appropriate.
- ___ 3 The labels are in mixed-case letters and oriented left to right for normal reading.
- ___ 4 Minimum and maximum values are shown on each axis, with up to 9 intermediate markings.
- ___ 5 The starting point on an axis is 0, with the gradations indicated in whole numbers.
- ___ 6 Gradations are at standard intervals; intervening gradations are consistent with the labeled scale interval.
- ___ 7 Labels are used instead of legends or keys to identify the data plotted on the graph.
- ___ 8 Labels are oriented horizontally and located next to the data being referenced.
- ___ 9 Each line or curve on a graph is labeled and coded; critical or abnormal data is coded.
- ___ 10 Grid lines are unobtrusive and do not obscure the data presented in the graph.
- ___ 11 Users can display or suppress grid lines as desired.
- ___ 12 A line graph contains no more than five lines/curves, and each is labeled.
- ___ 13 If data are presented in multiple graphs, the same coding scheme is used in each graph.
- ___ 14 Coding is used to highlight important information, distinguish actual from projected data.
- ___ 15 Multiple trend lines that have to be compared are presented on a single graph.
- ___ 16 Users can redraw multiple graphs using the same scale to facilitate comparison.
- ___ 17 When reading exact values is required, users can display them on the graph and can zoom, and the application provides aids to interpret scale.
- ___ 18 The area under each line in a surface chart is coded and identified by a label displayed in the area.
- ___ 19 If a surface chart is used, the data categories are ordered logically; if no a priori order exists, least variable data categories are on the bottom, most variable on top.

9.2.2 Bar Charts and Histograms

- ___ 1 Bar charts are used to compare a single measure at several intervals, histograms at a large number of intervals.
- ___ 2 Bar charts have a consistent orientation; comparable bars are adjacent.
- ___ 3 Frequency counts are displayed in vertical bars, time durations in horizontal bars.
- ___ 4 A reference index is provided when displayed data are compared with a critical value.
- ___ 5 Bars in a bar chart are separated, using one-half or less of bar width as spacing.
- ___ 6 Coding is used to distinguish among groups of bars, highlight important data in bars.
- ___ 7 In multiple bar charts or histograms, related groups of bars are presented in a consistent order.
- ___ 8 Each bar is identified with its own text label, rather than using a separate legend.
- ___ 9 The design of a bar chart or histogram conforms to user expectations.
- ___ 10 Icons are not used to represent quantitative information.
- ___ 11 Charts and axes are clearly labeled, and important information is highlighted.
- ___ 12 When bars are presented in pairs, they are labeled as a unit and include a legend to distinguish between them.
- ___ 13 Stacked bars are used when both the total measures and the portions represented by segments are of interest.
- ___ 14 If stacked bars are used, the data categories are presented in the same sequence.
- ___ 15 Data categories are ordered with least variable at bottom of bar, most variable at top.
- ___ 16 Areas within each bar are coded and identified by a text label displayed in the area.

9.2.3 Flow Charts

- ___ 1 Flow charts are used to provide a schematic representation of sequences or processes.
- ___ 2 The path indicated in the flow chart is left to right, top to bottom, or clockwise.
- ___ 3 Each decision point in the flow chart contains a single, simple decision.
- ___ 4 The flow chart elements and lines are consistently coded throughout the flowchart.
- ___ 5 The flow chart provides directional indicators to indicate the sequence to be followed.
- ___ 6 A legend describes each element and code; critical information and/or steps are highlighted.
- ___ 7 The steps in the flow chart are ordered logically, by importance, or by certainty; if there is no inherent logic, the steps are ordered to minimize the length of the path through it.
- ___ 8 The shapes used in the flow chart follow existing shape coding conventions.
- ___ 9 The text presented in the chart is oriented for normal reading.
- ___ 10 Important elements (e.g., paths) are emphasized through coding.

9.2.4 Pie Charts

- ___ 1 Pie chart is used to provide an approximation of how an entity is apportioned into parts.
- ___ 2 Each segment is coded in different colors/shading/texture and identified by text label.
- ___ 3 If segment is too small, the label is placed outside, with a line from it to the segment.
- ___ 4 The label describes content of segment and includes number being represented by segment.
- ___ 5 Segments are emphasized by special shading, displacing them from rest of chart.

9.3 TACTICAL INFORMATION

9.3.1 Tactical Symbolology

- ___ 1 Tactical symbolology conforms with available military standards and other relevant national and international standards as required.
- ___ 2 New symbolology created by the application is consistent with applicable standards and matches user expectations.

9.3.2 Coding of Tactical Information

- ___ 1 If color is used to convey tactical meaning, it is used as a redundant code and not as the sole basis for coding.
- ___ 2 Each color represents one category of tactical data.
- ___ 3 Color coding of threat status follows applicable military standards.
- ___ 4 When coding system status, green = operational; yellow = caution; red = inoperative.
- ___ 5 If color is used to show a change in system status, the change is signaled by changing the color of an object (e.g., a box or circle) next to the text.
- ___ 6 Colors selected for tactical coding are used only for that function; if one of these colors is assigned another meaning, a different shade is selected to minimize possible confusion.
- ___ 7 If color is used for alerting, it is assigned only to the information to which attention is directed.
- ___ 8 The standard meaning in terms of alert criticality is assigned to each color; the color has only this meaning.
- ___ 9 Alerting is indicated by assigning color to text information or by adding colored icons to text.

9.4 INFORMATION CODING

9.4.1 Color

- ___ 1 Color is used redundantly and only to provide required functionality; other coding methods are used whenever possible.

- ___ 2 The number of colors used to code information in an alphanumeric display does not exceed 7, and only 4 codes are displayed at any one time.
- ___ 3 The number of colors used to code information in a graphical display does not exceed 8-9.
- ___ 4 When information is color coded, users have the option of displaying the meaning of the code as a reminder.
- ___ 5 If the application uses shading, the colors differ sufficiently in intensity to be easily discriminable.

9.4.2 Flashing

- ___ 1 Flash coding is used only to display urgent information for user attention.
- ___ 2 No more than two levels of flash coding are used.
- ___ 3 The flash rate is 3-5 Hz with equal on/off times; if two levels of flashing are used, the second is 1-2 Hz with equal on/off times.
- ___ 4 For flash coding of a displayed item, a flashing symbol is used; the text does not flash.
- ___ 5 Users acknowledge the event causing the flashing and can suppress it if desired.
- ___ 6 Windows: If the application flashes the title bar of a window, the flashing is accompanied by an auditory signal as a redundant cue.

9.4.3 Reverse Video

- ___ 1 Reverse video is not used for coding in the application.

9.4.4 Size and Shape

- ___ 1 The number of size codes is 5 or less; users have to interpret relative, not absolute size.
- ___ 2 The number of shape codes is limited to 10-20 and relate to the object or operation represented.
- ___ 3 The color and detail added to shapes are the minimum needed to identify meaning of the shape.

9.4.5 Sound

- ___ 1 Auditory signals are used to alert to critical conditions or operations.
- ___ 2 For noncritical auditory alarms, a simple user action acknowledges and turns off the signal.
- ___ 3 Auditory signals are intermittent in nature and allow sufficient time to respond.
- ___ 4 Auditory signals are distinctive in intensity and pitch and do not exceed 4 different levels.
- ___ 5 Signal intensity, duration, and location are appropriate to the environment and personnel.

9.4.6 Text Font and Styles

- ___ 1 No more than two styles of type or two weights are used at one time.
- ___ 2 Variations in type sizes are limited to no more than three at any one time.
- ___ 3 Capitalization is not the sole indication of critical information in a window.
- ___ 4 Underlining is used sparingly and does not conflict with hypermedia conventions.

9.5 DYNAMIC INFORMATION

- ___ 1 Users can control the rate at which dynamically changing information is updated.
- ___ 2 Users can freeze an updated display, then resume at the stoppage or the current time.
- ___ 3 When reading dynamically changing information, the update rate is no more than once per second.
- ___ 4 When identifying rate of change or reading gross values, the update rate is 2-5 times per second.

- ___ 5 Users are prompted to return to automatic updating after freezing a dynamic window.
- ___ 6 Users are informed if significant changes in data occurred while the display was frozen.
- ___ 7 Users are able to control the playback of auditory information (e.g., start, stop, pause) and adjust the volume of the playback.

10.0 TASK-SPECIFIC WINDOW DESIGN

10.1 DATA ENTRY WINDOWS

- ___ 1 Data fields are organized by sequence of use, frequency of use, or importance, with related fields grouped together.
- ___ 2 When users work from a hardcopy form, the window format has an identical format.
- ___ 3 If the window contains different kinds of data fields, they are arranged for efficient data entry using the pointing device or keyboard and to minimize hand movement between input devices.
- ___ 4 For tabular data, entry areas are arranged in rows and columns, with each one labeled.
- ___ 5 In a group of related fields, the labels and text fields are left justified, or the labels are right justified and the text field left justified.
- ___ 6 A conditional field is placed to the right or below the field to which it relates; the field is either shown as unavailable or not displayed until the related control is selected.
- ___ 7 Users can obtain information (e.g., in the message bar, a help window) about a data field and its contents.

10.2 TABULAR DATA WINDOWS

- ___ 1 A tabular data window includes vertical/horizontal scroll bars if the data exceed the space available.
- ___ 2 If the data can be scrolled horizontally, the column heading scrolls with its associated column. If the data can be scrolled vertically, the column heading is outside scrolling area and remains visible and the window includes push buttons for paging.
- ___ 3 When users page through the data, the last line on one page is the first line on the next page.
- ___ 4 The content of the window does not extend over more than one page horizontally.
- ___ 5 If the data in the window can be sorted, users do so by clicking on the column heading.
- ___ 6 The heading remains highlighted after being selected to indicate the column that was sorted.
- ___ 7 If additional sort variations are needed, they are provided in pull-down menus or push buttons in the window.

10.3 LIST-TO-LIST TRANSFER WINDOWS

- ___ 1 A list-to-list transfer window contains source and destination lists and push buttons to transfer between lists.
- ___ 2 The push buttons contain text labels or arrows indicating the direction of the transfer.
- ___ 3 Push buttons are available/unavailable based on the direction of transfer between lists.
- ___ 4 The window can include radio/check buttons or option menus to modify the contents of the source list.
- ___ 5 Users can transfer multiple items but not multiple instances of item to destination list.
- ___ 6 An item in the source list can be copied or moved when transferred to the destination list.
- ___ 7 If transfer is a copy, the item is marked when transferred and unmarked when transferred back.

10.4 MAP WINDOWS

10.4.1 Map Information

- ___ 1 A map window includes identifying information about the map and status information such as coordinates, area, and scale.
- ___ 2 Identifying/status information appears in the message bar or in a subarea of the window itself.
- ___ 3 A continuous indicator of pointer location on the map is available in a standard window area.
- ___ 4 Maps are displayed using the same orientation, and the important features are labeled.
- ___ 5 Labels are positioned consistently with respect to features, do not obscure the features, and remain legible at all display resolutions.
- ___ 6 Map controls appear in the map window or are available in separate dialog windows.
- ___ 7 Users can pan and zoom a map as desired.
- ___ 8 Position or change indicators are provided to return quickly to the normal or starting map.
- ___ 9 Users can define a baseline position on a map and return to this position quickly.
- ___ 10 Users can determine distance and bearing between points and access other functions (e.g., areal computation/verification).
- ___ 11 Users can enter latitude and longitude to the level of accuracy needed.
- ___ 12 Calculations (e.g., range, bearing, position) reflect accuracy appropriate to the scale of the map displayed.

10.4.2 Map Objects

- ___ 1 Map objects are placed accurately or connected to the desired location with arrows, lines, or graphics.
- ___ 2 The label for a map object appears next to the object and presents essential information about it.
- ___ 3 The background of the object and label is transparent so as not to obscure other information.
- ___ 4 The intensity of the map is adjustable so that selected portions of the map can be faded without losing all map features.
- ___ 5 If multiple sets of map objects are available, users can switch between sets without losing data.
- ___ 6 Users can manipulate map objects and change the appearance of information about these objects.
- ___ 7 When a map is zoomed, the size of map objects (including labels) is adjusted to be readable.
- ___ 8 Objects such as overlays include visual indications defining the parts that are selectable.
- ___ 9 The pointing device selection methods in table 10-1 are used to select and deselect map objects.
- ___ 10 Keyboard methods for selecting map objects conform to methods in table 3-2 or 3-3.
- ___ 11 Users can view or declutter overlapping map objects and obtain additional information for selected objects.
- ___ 12 Users can distinguish coincident point objects and obtain information to resolve ambiguities.
- ___ 13 When displaying color overlays, a color coding key is also provided.
- ___ 14 Users can display the coding key as desired without having to redisplay the overlay.
- ___ 15 If the coding key is displayed in a dialog window, it is minimum size and obscures little of overlay.
- ___ 16 If the overlay uses shading, the coding key is a scale so users can interpret the coding in the overlay.

10.5 GRAPHICAL SCHEDULING WINDOWS

10.5.1 Schedule Design

- ___ 1 A graphical scheduling window is used to display timelines or scheduled events.
- ___ 2 A graphical scheduling window has time on the horizontal axis and tasks to be performed arrayed vertically.

- ___ 3 Schedule events are represented by an event icon whose length shows the time needed to complete a task.
- ___ 4 The icon is displayed to the right of its associated task.
- ___ 5 Types of events are indicated by color/shading, with the designator displayed on/above the icon.
- ___ 6 Users can access a legend or key that describes the coding technique used in the schedule.
- ___ 7 No more than nine uniquely coded event icons are presented on a schedule at one time.
- ___ 8 Each icon is labeled if more than one event icon is used per task.
- ___ 9 Event icon labels are placed along the vertical axis or on/above the timeline.
- ___ 10 Different scheduling attributes are represented by displaying symbols with event icons.
- ___ 11 Symbols are formed from geometric shapes, fill patterns to show different situations.
- ___ 12 Gridlines are available if the schedule is cluttered or users require a high degree of precision.
- ___ 13 The gridline indicates present date and time; users can show or hide the line as needed.

10.5.2 Schedule Manipulation

- ___ 1 Users can define the start and stop time of the schedule to the desired degree of precision.
- ___ 2 Users can display all or part of the preselected duration time.
- ___ 3 Users can select an individual event icon and obtain additional information about the event.
- ___ 4 The pointing device selection methods available to users comply with those in table 3-1.
- ___ 5 Users can reschedule an event icon using transfer methods described in section 3.5.
- ___ 6 If exact positioning is difficult, users have alternative methods to locate the icon.

11.0 USER SUPPORT RESOURCES

11.1 OBJECT-LEVEL HELP

11.1.1 Message Bar Information

- ___ 1 If a window has a message bar, object-level help is displayed in that area when the object has keyboard focus.

11.1.2 Context-Sensitive Help

- ___ 1 If context-sensitive help is available, <Shift> <Help> in Motif or <Shift><F1> in Windows invokes this mode and changes the pointer to a “help” shape.
- ___ 2 Users place the pointer on a window component and click BSelect to display information about the component in a pop-up Help window.
- ___ 3 The pop-up Help window contains a brief description of the component and how to use it.
- ___ 4 Motif: In windows with a menu bar, access to context-sensitive help is available by selecting the On Item option from the Help menu and clicking BSelect on a window component.
- ___ 5 Help information is provided whenever users invoke context-sensitive help; users do not receive a “Help not available” message.

11.2 WINDOW-LEVEL HELP

11.2.1 Window Design

- ___ 1 Window-level help is available for every window in the application.
- ___ 2 Users access this help by activating a Help push button or menu option or by pressing <F1> (or <Help> in Motif) in an application window.
- ___ 3 The Help button or option is dimmed and unavailable for selection if help is not available; an empty help window (or one indicating that no help is available) is not displayed.

- ___ 4 The title of a help window includes the name of the application window for which help was requested.
- ___ 5 The window is large enough to display at least ten lines of text in the display area and wide enough to display an entire line of text.
- ___ 6 The window includes scroll bars if the text exceeds the available display area.
- ___ 7 The window has an OK push button which is the default in the window and may include Previous, Next, and More push buttons.
- ___ 8 When a help window appears, it is located to the right/left/above/below, but does not cover the component for which help was requested.
- ___ 9 When a help window appears, it displays information at beginning of the help description.
- ___ 10 A help window can be moved and resized and is modeless.
- ___ 11 Users can print any help window by selecting all or marking the beginning and end of part of the text.
- ___ 12 A help window is removed when the parent application window is minimized or closed.
- ___ 13 When users close a help window, focus returns to the application window for which help was requested.

11.2.2 Window Content

- ___ 1 The help window presents only the information related to the application window for which it provides support.
- ___ 2 The help window provides information on the purpose of the window and the actions available.
- ___ 3 Help can explain procedures for performing the task(s) presented in the window or include a More push button that provides access to this information.
- ___ 4 Text is bulleted, steps are numbered, and explanations are presented in columns.
- ___ 5 Graphics are included only if essential to understand task in the application window.
- ___ 6 When presenting a sequence of steps, the explanation follows the same sequence.

11.3 APPLICATION-LEVEL HELP (TBD)

11.4 SYSTEM-LEVEL HELP

- ___ 1 Motif: Users can access system-level support resources from Help Manager as well as obtain help on how to use the desktop and the Front Panel.